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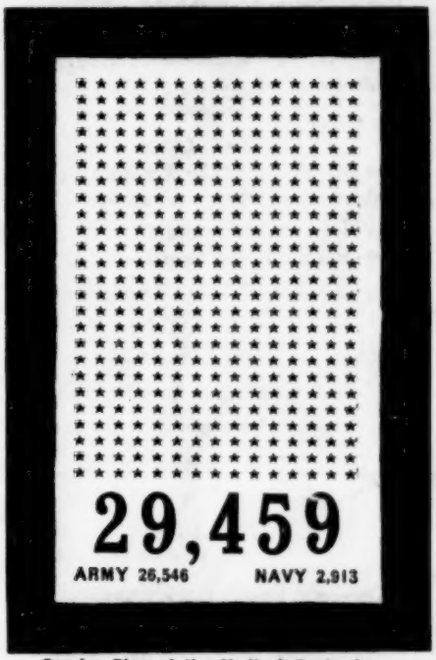

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SYMPOSIUM ON DISEASES DUE TO DEFICIENCIES IN NUTRITION*

THE "VITAMIN" HYPOTHESIS AND THE DISEASES REFERABLE TO FAULTY DIET†

E. V. McCOLLUM, PH.D.

BALTIMORE

The studies of the past decade have revealed the fact that the adequate diet of the higher animals must contain protein of the type known as "complete," by which we mean a protein yielding all the amino-acids that are required in the nutrition of an animal. It must contain, in the form of suitable salts, at least nine of the inorganic elements, namely, calcium, magnesium, sodium, potassium, iron, chlorin, iodin, phosphorus and sulphur. The sulphur must be in organic combination in the form of the amino-acid cystin. The diet must supply a suitable quota of energy in the form of protein, carbohydrates and fats, and must, in addition, contain certain substances of unknown chemical nature, to which Funk gave the name "vitamins." There are still differences of opinion concerning the probable number of these substances.

There are two ways of attacking the solution of this problem. We may attempt to show that the several syndromes that are referable to faulty diet can be relieved by the administration of such preparations as make it certain that the relief is not brought about by any known and well recognized constituent of the diet. For each of the syndromes now usually spoken of as "deficiency" diseases, which can be conclusively demonstrated to be relieved by such a method, the existence of a substance of the class frequently designated as "vitamins" is demonstrated. Successful attempts in this direction have been limited to two syndromes. Beriberi, which is recognized as being due to the lack in the diet of a sufficient amount of a substance, which is an organic compound, and of which an animal requires only a very small amount, and more recently, a type of xerophthalmia which results from specific starvation for a substance that is especially abundant in the fats of milk and of egg yolk, but is found in all foods which contain cellular structures, whether these are of animal or vegetable origin. McCollum and Simmonds[1] first pointed out that this syndrome is analogous to polyneuritis in that there is an organic substance which is found widely distributed in natural foodstuffs which, when administered, causes a prompt relief of all the symptoms in animals that are moribund as the result of specific starvation for this substance. Efforts to demonstrate the existence of a specific substance which can relieve scurvy, a disease which is certainly brought about by faulty diet, have up to the present time proved unsuccessful. Although pellagra has been suspected by some as being one of the "deficiency" diseases in the same sense as beriberi, no evidence of a convincing nature has been brought forward in support of this view.

A second method of approaching the problem of determining the number of chemically unidentified substances which are present in the normal diet and are essential for the preservation of a state of physiologic well-being is through a study of diets simplified as far as possible, and containing only known chemical compounds. The early work in this field by Henriques and Hansen[2] was not sufficiently thorough to contribute much, and that of Hopkins[3] did nothing more than demonstrate the necessity of having in the food of an animal some substance or substances other than the long recognized dietary essentials, protein, carbohydrate, fats and mineral salts. The announcement of the necessity of certain "accessory" food substances, by Hopkins, marked the beginning of a new era in nutrition studies.

Osborne and Mendel[4] conducted an extensive experimental inquiry into the possibility of adequately nourishing an animal during growth on mixtures of carefully purified foodstuffs for the purpose of studying the relative biologic values of the numerous purified proteins that Osborne had isolated from vegetable sources. All their efforts were unsuccessful, and they ultimately adopted a basal food mixture containing a liberal amount of "protein free milk," a product containing all the constituents of milk other than the casein, lactalbumin and fat. To this was added carbohydrate, fat, the indigestible substance agar-agar, and the protein which it was desired to study. Diets of this character cannot be considered as containing only purified foodstuffs, and are not comparable with them.

McCollum and Davis[5] made a systematic effort to find why animals do not thrive on diets consisting of proteins, carbohydrates, fats and inorganic salts. The

* This symposium includes the papers by E. V. McCollum; Alfred F. Hess; Joseph Goldberger, G. A. Wheeler and Edgar Sydenstricker; John R. Murlin, and Paul Roth—the first five papers in this issue.

† From the School of Hygiene and Public Health, Johns Hopkins University.

† Read before the joint meeting of the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

1. McCollum, E. V., and Simmonds, N.: Jour. Biol. Chem., 1917, **32**, 181.

2. Henriques, V., and Hansen, J.: Ztschr. f. physiol. Chem., 1905, **43**, 417.

3. Hopkins, F. G.: Jour. Physiol., 1906, **44**, 425.

4. Osborne, T. B., and Mendel, L. B.: Bull. 156, Publications of the Carnegie Institution of Washington, Parts 1 and 2, 1911.

5. McCollum, E. V., and Davis, M.: Jour. Biol. Chem., 1915, **23**, 231.

details of these studies cannot be described here,[6] but the results led them to the belief that in addition to the above named substances the diet, to maintain health, must contain two chemically unidentified substances. These have been designated by McCollum and his co-workers as fat-soluble A and water-soluble B. The first of these is found abundantly in certain fats, as those of the egg yolk and milk; the second is never associated with any fats of either animal or vegetable origin. When the diet lacks the substance of fat-soluble A, animals develop a peculiar eye affection in which the tissues surrounding the orbit swell until the eyes cannot be opened. There is inflammation of the cornea, and blindness results within three or four weeks. The eyes resume the normal appearance after a period of feeding such foodstuffs as contain the dietary essential in question. What we term water-soluble B is the "curative" substance for polyneuritis, or beriberi.

According to the view of my co-workers and myself, these two syndromes constitute the only "deficiency" diseases in the sense in which Funk used this term. Scurvy and pellagra, while due to faulty diet, are apt to be explained in other ways than by a lack of specific complex in the diet.

SCURVY

Whatever I may say regarding the nature of the cause of scurvy need apply only to the disease as it is produced experimentally in the guinea-pig, for I have had no extensive opportunity to observe it in the human subject. There are certain well established facts regarding the causation of the disease in the guinea-pig that must be given careful consideration before one forms an opinion concerning the etiology of the syndrome. These will be briefly considered, but first a few words should be said about the character of the most simplified diets with which success has been attained in the nutrition of other species of animals. The animal with which most of the experimental work has been done with such diets is the rat.

It is possible with a diet consisting of carefully purified protein, starch, a suitably constituted inorganic salt mixture, a small amount of indigestible substance, such as agar-agar, together with a fat that contains the dietary essential fat-soluble A (for example, butter fat) and an extract, either by water or alcohol, of some natural foodstuff (such as wheat germ or yeast) to nourish young rats so as to induce practically a normal growth curve to about the full adult size. The extract must, therefore, contain the one or more unidentified dietary essentials not furnished by the butter fat. Either the butter fat or the extract alone in the diet is not sufficient. If the former is omitted, xerophthalmia will appear, and if the butter fat is included and the extract is omitted, polyneuritis will result. A problem of great interest is to determine whether this extract contains one or more than one indispensable substance. Since rats do not develop scurvy on such a diet, one of two assumptions must be accepted. Either the rat does not require a certain chemical complex, a hypothetic antiscorbutic substance which is necessary for the normal nutrition of certain other species, as man and the guinea-pig, both of which are susceptible to the disease, or the antiscorbutic substance, if there be one, is furnished by the extract in question. To say that all the experimental evidence, which is now extensive, points to the conclusion that the chemical requirements of one species of the higher animals is the same as another is scarcely sufficient to dispose of this view.

My associates and I[7] have thrown light on the problem as to whether such extracts contain but one or more than one indispensable dietary complex by our studies of the dietary properties of extracts of natural foods prepared in a somewhat elaborate manner. It was shown that navy beans can be thoroughly extracted with ether, then with benzene, and that neither the ether-soluble nor benzene-soluble material has the power to relieve polyneuritis in the rat, when the animals were caused to develop the disease by restricting them to a diet of purified foodstuffs plus fat-soluble A (butter fat). That the antineuritic substance (water-soluble B) was not destroyed by this treatment of the beans was shown by the fact that the extracted beans or an alcoholic extract of the same still caused prompt recovery of the animals, and resumption of growth when added to the diet. It was further observed that when the material which can be extracted by hot alcohol from beans previously extracted with both ether and benzene was spread over a large surface, by evaporating the alcohol on some finely divided substance, such as dextrin, and the latter then extracted with hot benzene, the benzene-soluble material was capable of inducing prompt recovery of animals suffering from polyneuritis, and of causing them to grow during several weeks. It cannot be argued that the "cure" was temporary in these experiments, for the animals were in a perfectly normal condition when the experiments were discontinued. It follows that, if in addition to the antineuritic substance the benzene extract of the alcohol-soluble material from beans likewise contained an antiscorbutic substance, these, as they exist in the bean, must have both been practically completely insoluble in ether and in benzene, for the extractions were conducted in a continuous extract or for a period of eighteen hours, and that both must have been soluble in hot alcohol, which solvent was likewise continuously applied for a like period. After being removed from the beans by means of hot alcohol, both must have been soluble in hot benzene. The probability that there should be two substances with such unlike physiologic properties, which should agree so completely in their solubility relations, is exceedingly small.

My associates and I[6] have described feeding experiments with rats, in which a purified food mixture consisting of casein, starch (dextrinized), a salt mixture, and butter fat formed 75 per cent. of the food supply, and 25 per cent. of navy beans the remainder. The beans were soaked and heated in an autoclave at 15 pounds pressure for an hour and a quarter, dried and ground. The beans furnished the only source of chemically unidentified food substances other than fat-soluble A, which was supplied in the butter fat, and which, as has been stated, bears no relation to scurvy. On this diet young rats grow well and reach the full adult size. According to the commonly accepted views concerning the properties of the supposed antiscorbutic substance, it should be destroyed by such drastic treatment.

A very significant fact in connection with the production of scurvy in the guinea-pig is that the disease

6. McCollum, E. V.: The Supplementary Dietary Relationships Among our Natural Foodstuffs, The Journal A. M. A., May 12, 1917, pp. 1379-1386.

7. McCollum, E. V., and Simmonds, N.: Jour. Biol. Chem., 1918, **33**, 55.

develops when the animals are confined to a diet of rolled oats and milk. This diet is highly satisfactory for the maintenance of health and the support of growth in those species of animals which we have observed (rat and swine) with the exception of the guinea-pig. There can be nothing lacking from a diet of oats and milk which is essential for the maintenance of growth and health in the swine and rat, yet the guinea-pig suffers malnutrition promptly when confined to this food supply. In fact, it has been shown by McCollum and Pitz[8] that a number of diets which suffice for the nutrition of the rat are very unsatisfactory for the guinea-pig. The latter ordinarily thrive only on diets which contain a succulent vegetable, since its cecum becomes packed with feces on diets which are unsuited to its digestive tract. The cecum in this species is very large and delicate, and such a constipating diet as oats and milk causes malnutrition because of the physical properties of the feces which are formed from it, rather than because of a lack of any antiscorbutic substance.

McCollum and Pitz[8] were able to cause the recovery of guinea-pigs which were near death, by the lubrication of their alimentary tracts by the administration of liquid petrolatum, and by the administration of suitable doses of phenolphthalein, which induced sufficient secretion of liquid into the tract to keep the contents of the cecum soft and capable of elimination. Relief and protection in this species were also afforded in several instances by the addition to the diet of an artificial orange juice, made up of such a salt mixture, sucrose and citric acid, as furnished these in about the proportions contained in the edible portion of the orange.

That the condition characterized by swollen joints, hemorrhages in the knees and elbows and gums was actually scurvy rests on the microscopic examinations of their animals by Jackson and Moore,[9] who first described development of the disease by restricting guinea-pigs to an oat and milk diet, and on the diagnosis of the disease by Holst,[10] in animals restricted to an oat diet.

Very important information relating to the etiology of scurvy is furnished by the observations of Hess[11] on human infants. I regard his discussion of the relation of heated milk to the causation of scurvy in infants as the best correlation of the clinical observations that has yet been made, since it harmonizes the conflicting views of various observers, and his conclusions are in harmony with the results of studies on animals fed on simplified diets. Briefly summarized, the data seem best explained as follows:

One of the factors in the pathogenesis of infantile scurvy is faulty diet. Pasteurized milk is a contributing cause when it is stale, and therefore, not in good bacteriologic condition. Aging of milk, with its development of an abnormal flora, is a more important factor in the production of scurvy than is heating, whether the heat treatment involves only pasteurization or heating to the boiling point. Boiled milk or milk pasteurized at from 140 to 145 F. is less liable to induce scurvy than is milk heated at 165. Boiling tends to destroy all the bacteria in milk. Heating to from 140 to 145 for thirty minutes fails to destroy all the lactic acid forming organisms, and milk so heated will sour. The souring is a protective process, in that the development of acid holds in check the growth of putrefactive forms, which constitute the dangerous factor in stale heated milks. Milk that has been pasteurized at 165 will no longer sour unless reseeded with lactic acid bacteria after the pasteurization process. In clean, well regulated pasteurization plants this does not happen, but may occur in slovenly managed plants.

Holst[10] believed that scurvy in the guinea-pig develops as the result of a lack of an antiscorbutic substance in the diet, and believed that this is so unstable that the ordinary drying of cabbage causes its destruction. He held that the oat kernel lacks this antiscorbutic substance. McCollum, Simmonds and Pitz[12] have shown that rolled oats can be supplemented with pure protein (gelatin), an inorganic salt mixture, and butter fat, so as to render it capable of satisfactorily nourishing young rats from weaning time to full adult size, growth taking place at the normal rate. Jackson and Moore[9] have emphasized that butter fat has no tendency to protect the guinea-pig against scurvy, and this I have fully confirmed. It must follow that the oat kernel contains a satisfactory amount of antiscorbutic substance, provided the rat requires such a complex. The fact that the guinea-pig, when fed this diet of oats and purified food additions, rapidly fails necessitates the assumption that the guinea-pig requires a chemical complex not necessary for the normal nutrition of the rat, or the abandonment of the view that an antiscorbutic substance exists.

Hess[11] has also pointed out that one of the common symptoms of scurvy is oliguria, and that the mild therapeutic effect of citric acid may be ascribed to its diuretic properties. He likewise noted in infants the diuretic effects of orange juice. This is an important observation which should aid one in appreciating the fact that the organism may react with the development of profound pathologic states, such as constitute the most prominent features of scurvy, from causes other than a specific starvation for a hypothetic antiscorbutic substance. Injury to the mucosa of the digestive tract may be brought about through diets of faulty physical character, in such an animal as the guinea-pig, because of the peculiar disability of this species due to the unfortunate anatomy of its digestive apparatus. Stagnation of the contents of the cecum are followed by abnormal decompositions, and contact of the mucosa with these may be reasonably held to cause injury. It is not necessary to assume the invasion of the body by organisms as a factor in the causation of scurvy, although this may take place, as the studies of Jackson and Moore[9] indicate. The absorption of abnormal decomposition products of proteins under these conditions may be chiefly responsible for the changes observed. The observation of Lewis[13] that there is no increase in the excretion of phenol in guinea-pigs fed an oat diet can have but little bearing on the extent to which protein is undergoing fermentative decomposition in the digestive tract of the animal, since phenol production is limited by the yield of aromatic amino-acids by the proteins which are being putrefied. Longcope[14] points out that the characteristic result of acute anaphylactic shock in guinea-pigs is the

8. McCollum, E. V., and Pitz, W.: Jour. Biol. Chem., 1917, **31**, 229.
9. Jackson, Leila, and Moore, J. J.: Jour. Infect. Dis., 1916, **19**, 478.
10. Holst, A., and Fröhlich, T.: Ztschr. f. Hyg. u. Infektionskrankh., 1912, **72**, 1.
11. Hess, A. F.: Infantile Scurvy, Am. Jour. Dis. Child., November, 1917, pp. 337-353.
12. McCollum, E. V.; Simmonds, N., and Pitz, W.: Jour. Biol. Chem., 1917, **29**, 341.
13. Lewis, H. B., and Karr, W. G.: Jour. Biol. Chem., 1917, **28**, 17.
14. Longcope, W. T.: Harvey Lecture Series, 1915-1916, p. 296.

appearance of hemorrhages. He further states that "undoubtedly infection is the most important factor in the cause of nephritis in man," a view that has gained wide acceptance within recent years.

Recovery from scurvy following a change of diet, or an improvement of the bacteriologic condition of the food, or following the administration of substances having diuretic properties, may be more satisfactorily explained in other ways than by the assumption that such changes in the dietary regimen produce their effects because of the introduction of a hypothetic antiscorbutic substance. It is necessary, henceforth, that those who discuss the etiology of scurvy should take into consideration the results of recent researches in nutrition with simplified diets. Whoever would seek to establish the validity of the theory of the existence of a specific antiscorbutic substance should first furnish new explanations for the experimental results that are not in harmony with the antiscorbutic theory, rather than present new experiments that harmonize with this most attractive hypothesis.

PELLAGRA

One of the greatest public health problems, a practical method for the prevention and treatment of pellagra, has been solved by Goldberger and his associates. There remains little room for doubt that faulty diet is the primary factor in the causation of the disease, and that the inclusion of an abundance of milk in the diet will prevent an attack, or cause recovery. It should be mentioned here that my co-workers and I[6] have established the fact that it is not possible to secure diets derived solely from the seeds of plants, together with tubers and edible roots, which will adequately nourish either a young animal during growth, or long maintain health in the adult. Even mixtures of these foodstuffs together with liberal amounts of meat (round steak) fail to induce satisfactory nutrition in the growing young. There are, as is shown by their investigations, but two types of food mixtures which give very satisfactory results in the nutrition of experimental animals. These are: (1) combinations in which seeds, tubers, edible roots and meats are either singly or collectively combined with suitable amounts of the leafy portion of the plant, and (2) combinations of seeds, tubers, roots, meats and leaves, singly or collectively, with liberal amounts of milk.

The vegetable foods listed under 1 are, with the exception of leaves, all structures whose functions are those of storage organs. They consist principally of a reserve food package of proteins, starch, sugars, fats and mineral salts, but in the germ of the seed, and certain areas in the tuber and root, there are cellular structures which constitute actively metabolizing protoplasm. The leaf, aside from its skeletal tissues, is rich in cells, and a large part of it is active protoplasm. There goes with this difference in function between the leaf and the storage organs a corresponding difference in dietary properties. Seeds, tubers and roots, and probably likewise fruits, are deficient in three respects from the dietary standpoint. In all cases they are too poor in three inorganic elements, namely, calcium, sodium and chlorin; they do not contain a sufficient amount of fat-soluble A, and their proteins are of relatively low biologic value as compared with those of milk, meats and eggs. The leaf of the plant and milk are so constituted as to make good these deficiencies, when they are included in the diet in sufficient amounts. It is for this reason that I have recently introduced the term *protective foods*, to designate milk and the leafy portion of the plant. Meats supplement seeds, tubers and roots with respect to protein, but not efficiently with respect to the other deficiencies. Eggs should be classed with milk in their special food properties, but are not so rich in calcium when the shell is discarded. From the studies of Goldberger, it has been found that the diets of the peoples in those districts in which pellagra is found is derived in great measure from seed products, tubers and meat, principally fat pork. For an experimental attempt to produce pellagra in man, Goldberger selected a diet consisting of bolted wheat flour, degerminated corn meal, polished rice, sugar, starch, syrup, pork fat, sweet potatoes, cabbage, collards, turnip greens and coffee. I have calculated that about 95 per cent. of the total dry matter of this diet was derived from the endosperm of seeds and pork fat. There was present entirely too small an amount of the leaf (the sole *protective food*) to correct the faults in the rest of the food mixture.

In order to determine whether there is lacking from this list of foodstuffs any chemically unidentified food essential analogous to fat-soluble A and water-soluble B, McCollum, Simmonds and Parsons have fed to rats the mixture in the proportions employed by Goldberger, and in a series of experimental animals the same diet was fed supplemented with single and multiple additions of carefully purified foodstuffs. It has been shown[15] that it is possible to supplement this diet with known food principles, so as to make it sufficiently complete from the dietary standpoint to enable young rats to grow at a fairly good rate and to remain in a state of health. It seems necessary to conclude from this that the faults in such diets as are derived largely from seed products, tubers, molasses and fat meat, have essentially the same kinds of deficiencies as have seeds generally; but in diets in which the endosperm of the seeds predominates (polished rice, bolted wheat flour, degerminated corn meal) the deficiencies are much more pronounced than would be the case if the entire seeds were employed. Each of the more important cereal grains have been shown to require three kinds of additions to make them dietetically satisfactory.[6] These are the inorganic elements calcium, sodium and chlorin, a protein, and fat-soluble A, the unidentified dietary essential which is most abundant in butter fat and the fats of the egg yolk.

Chittenden and Underhill[16] have described in dogs what they believed to be a condition closely resembling pellagra in man, by restricting the animals for periods varying from two to eight months to a diet consisting of peas, crackers (equivalent to bolted flour) and cottonseed oil. They observed sloughing of the mucosa of the mouth, diarrhea, ulceration of the gastric mucosa, and skin lesions. They held the view that the cause was probably to be sought in the lack of some unidentified dietary essential of the class which Funk designated as "vitamins."

McCollum, Simmonds and Parsons[17] have demonstrated that this diet can be supplemented with care-

15. McCollum, E. V.; Simmonds, N., and Parsons, H. T.: Unpublished data.
16. Chittenden, R. H., and Underhill, F. P.: Am. Jour. Physiol., 1917, **44**, 13.
17. McCollum, E. V.; Simmonds, N., and Parsons, H. T.: Jour. Biol. Chem., 1918, **33**, 411.

fully purified protein, the salts, calcium carbonate and sodium chlorid, and butter fat (fat-soluble A) so as to make it sufficiently complete to enable young rats to grow from weaning time to full adult size. This proves that there is no deficiency in this diet other than in the three now well recognized dietary factors. Rats that were brought to a moribund condition as the result of restricting them to a diet of peas, wheat flour and cottonseed oil showed at necropsy an apparently normal condition of the mucosa of the mouth and intestine. There was no diarrhea, and there were no skin lesions suggestive of pellagra in man. Partial loss of hair was observed.

Jobling and Petersen[18] have made a very thorough study of the conditions in those parts of Nashville where pellagra occurs, and have reached the conclusion that the disease involves an infection, being especially prevalent in those districts where sewage disposal does not exist, and where flies have free access to human excreta, and the houses are unscreened. The Thompson-McFadden[19] Commission likewise believe that the disease is caused by infection. The studies of Jobling and Petersen show that the diet of pellagrins is derived during the greater part of the year from seed products, tubers, molasses and fat meat. It is at the end of winter, after several months on a restricted diet of this character, that the new cases and recurrences of old cases occur. During the summer, when green vegetables are obtainable, and the milk supply is better than during the winter, recovery takes place.

It cannot be definitely stated at present whether man will react to the continued restriction to such diets as those described, with the appearance of the syndromes characteristic of pellagra, without the agency of an infection. The infection theory cannot be dismissed at the present time, but it seems certain that if pellagra is the result of infection, the latter is always superimposed on a certain degree of debility that results most frequently from the adherence for a considerable period to a diet of a faulty character. It seems practically demonstrated that the faults of the diets that lead to the appearance of the disease are not due to the absence of any unidentified dietary essentials, but rather to poor quality with respect to three of the well known dietary factors.

18. Jobling, J. W., and Petersen, W.: Jour. Infect. Dis., 1916, **18**, 501.
19. Siler, J. F.: Garrison, P. E., and McNeal, W. J.: Pellagra, THE JOURNAL A. M. A., Jan. 3, 1914, pp. 8-12.

Whole Wheat Flour and a Balanced Diet.—Under these circumstances the plea for whole wheat flour in the American diet today fails of justification from this point of view. People should be allowed to select their roughage, whether in the form of fruits and vegetables, or in the form of whole grains. They should be allowed to select their mineral salts and vitamins in the same manner, and both are freely available. The legal distinction between food conservation and health propaganda must be kept in mind. It is argued in favor of whole wheat flour that its use might relieve or prevent constipation, rickets, scurvy, anemia and pellagra. But the function of a food administration is to secure and conserve food, not treat preexisting diseases in a compulsory manner, applied to the majority who are not afflicted, as well as to the minority who may be diseased but still possess the right to select their treatment. In each country at war diet fads are being pushed at the food administration, who must confine themselves to the specific functions defined by legislative authorization.—A. E. Taylor, "War Bread."

THE RÔLE OF ANTISCORBUTICS IN OUR DIETARY*

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From one standpoint our foodstuffs may be classified as essential and nonessential, according as to whether or not they are necessary for the maintenance of life and normal growth. Among the former group may be mentioned the proteins, inorganic salts, and the water-soluble and fat-soluble "vitamins" which recently have been the subject of so much discussion. In my opinion the essential group includes also a food factor that is a necessary component of the diet if we would be protected against the development of scurvy.

In view of the present lack of knowledge it would be fruitless to discuss the question of the exact nature of this food factor—whether it should be termed vitamin, whether it is indeed a food substance, or whether it should be regarded merely as an activator or catalyzer of the foodstuffs. What I wish rather to emphasize is that unless the diet of man includes food possessing this antiscorbutic property, scurvy will develop in due course of time. From this point of view, scurvy must be regarded as a deficiency disease. If, however, we would limit this term to diseases brought about by a deficiency of a definite chemical or biologic substance, then we are not at the present time warranted in thus classifying it. Nor is it necessarily true that scurvy is directly brought about by a lack of this accessory food factor. It is quite probable, as brought out elsewhere,[1] that the lack of this factor leads rather to the development of substances which in themselves occasion the symptoms of the disease.

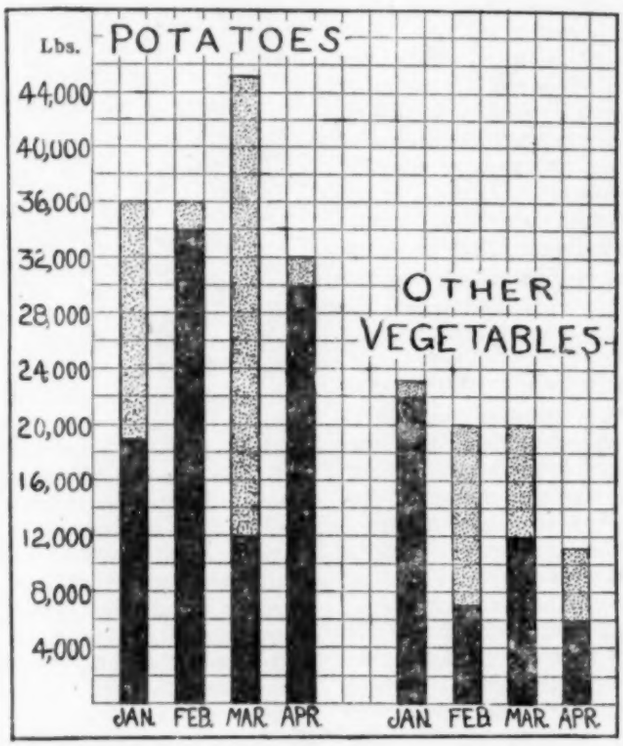
I have introduced the subject from this angle as its entire relevancy depends on the question of whether there are or are not antiscorbutic foodstuffs. If the protective or curative value of such foods are, as McCollum and Pitz[2] have recently contended, merely dependent on their laxative properties, and interchangeable with laxatives, such as liquid petrolatum or phenolphthalein, then scurvy is in no sense whatsoever due to food deficiency, and has not a proper place in this symposium. Observations of many cases of infantile scurvy, however, have convinced us[3] that constipation plays no essential rôle in this disease. In reviewing the many cases that we have seen we find that the infants were not constipated to a greater degree than normal babies, and that the disorder bore no parallel relationship to the activity of the bowels. Furthermore, as brought out in a recent paper,[1] potato, which is a sovereign remedy for scurvy, is not a laxative, and malt soup preparations, which most readily lead to this disorder, are rather laxative than constipating. To this evidence may be added a recent experience that infantile scurvy does not yield to treatment by liquid petrolatum, but that its symptoms are rapidly alleviated by small additions of orange juice to the dietary, so small as to be without apparent effect on the bowels. In this connection we may add an observation that will be referred to again in its relation to the therapy of this disorder, namely, that orange juice,

* Read before the joint meeting of the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

1. Hess, A. F.: Infantile Scurvy, Am. Jour. Dis. Child., January, 1917, p. 98.
2. McCollum, E. V., and Pitz, W.: Jour. Biol. Chem., 1917, **31**, 229.
3. Much of this work has been done in conjunction with Dr. Lester J. Unger.

boiled and rendered slightly alkaline, may be given intravenously with signal success; this procedure leads to no laxative action, and it is evident that its effect cannot be explained in this way. The nature of the antiscorbutive potency of orange juice remains as much an enigma today as ever. Recently we made use of "artificial orange juice,"[4] prepared according to the formula of McCollum, who had found it of marked therapeutic value in the scurvy of guinea-pigs. After a trial of three weeks, however, it was found to be ineffective; on substitution of orange juice in the same dosage, the hemorrhage of the gums disappeared within a few days.

It will be of advantage to digress for a moment to say a few words concerning the relationship of the so-called guinea-pig scurvy to that of human beings. There is great danger of error in translating the results obtained on these animals directly into terms of the human disease. It would seem that much of the confusion of thought and difference of opinion at the present time as to the nature of scurvy is due to the fact that some are thinking of a disease which they have produced in animals, and others of scurvy as they have encountered it in man; furthermore, that some have brought about a disease in animals by means of one diet, whereas others have employed a diet of quite different nature. These divergences can be harmonized only by a study of the pathology of the disease. At present the diagnosis of scurvy in guinea-pigs, in most investigations, is based solely on clinical signs, uncontrolled by microscopic examination of the bones, in spite of the fact that there are osseous changes which are typical of this disease. The pitfall of omitting histologic examination may be judged when we state that recently we have found that guinea-pigs fed on certain diet may manifest typical signs of scurvy and yet microscopic examination of the bones suggests that we are dealing with rickets and not with scurvy. It would seem as if many of the results of Jackson and Moore[5] are to be interpreted in this way. Gerstenberger,[6] in a recent article, suggested that some of the scurvy in guinea-pigs might be rickets or pseudoscurvy. At any rate, if we are to avoid great confusion, and a repetition of an error similar to that which delayed for years the differentiation of congenital syphilis from rickets in human pathology, all reports of experimental scurvy should be controlled by careful pathologic examinations.



A comparison between the requisitioned quantity (in thousand pound units) of potatoes and other vegetables, and the quantity received per month by an institution in which more than 200 cases of scurvy occurred at the beginning of April, 1916. The total height of column represents the amount needed and requisitioned; the solid black portion the amount received. The number of inmates in the institution remained approximately the same. The chart illustrates our great dependence on the potato during the winter months. This is due not only to its intrinsic antiscorbutic potency, but, probably quite as much, to the fact that fully twice as many pounds of potatoes are consumed during the winter as of all other vegetables combined. Therefore, according to present dietary habits, if this crop fails or is dehydrated (devitalized), scurvy will develop in the spring.

Every individual requires a certain amount of antiscorbutic substance in his dietary, or, to put this statement in a broader way, every nation has need for a per capita quota of foodstuffs containing this necessary food factor, if scurvy is to be avoided. How much of this type of food is required, in other words, what is the antiscorbutic minimum for the individual or for the nation, is just as little known as is the minimum requirement of other so-called vitamins. The margin of safety over our annual supply is certainly not very great, assuredly not as large as the excess of water-soluble vitamin, which is so abundantly distributed throughout nature, and probably no greater than that of the fat-soluble vitamin, which McCollum has shown to be present to a considerable extent in milk, eggs and the leaves of plants. How scant is the margin of safety in some countries may be judged from the fact that in Ireland they are dependent for their health in this regard on the potato — when the crop fails, scurvy develops. That we in the United States are not entirely independent of the potato crop for our antiscorbutic supply was shown in 1916, when, as you remember, we had to depend on an exceptionally poor yield of the previous year. As a result of this potato deficiency, scurvy developed in numerous institutions in the spring; in one there were to my knowledge more than twenty deaths; in another, in which the amounts of vegetables, and more particularly of potatoes, received during the months of January, February and March were far below what were needed and requisitioned, as shown in the accompanying chart, scurvy broke forth in April and attacked more than 200 inmates. It may be added that when 200 cases of frank scurvy are diagnosed in an institution there are probably an equal number of latent cases which escape observation, for we must remember that it takes about six months of food deprivation for an individual to manifest scurvy.

Scurvy has not only a civil but also a most important military aspect. As is well known, it was at one time the scourge of armies. In de Joinville's account of the Crusade of Louis XI, we read of its attacking the troops in Palestine; in Lind's classic monograph on this disease, it is recorded that "when the Swedes car-

4. This artificial orange juice was prepared from pure inorganic salts, sucrose and crystalline citric acid in proportions similar to those found in the edible portion of the orange.

5. Jackson, Leila, and Moore, J. J.: Jour. Infect. Dis., 1916, **19**, 478.

6. Gerstenberger, H. J.: Am. Jour. Med. Sc., 1918, **155**, 253.

ried on a war against the Muscovites, almost all of the soldiers of their army were destroyed by the scurvy."[7] But we do not need to retrace our steps so far to learn of the appearance of scurvy in the army. In the "Medical and Surgical History of the War of the Rebellion" we find the following statements:[8]

"A scorbutic tendency was developed at most of our military posts during the winter season, after the troops had been confined to the use of the ordinary ration with desiccated vegetables. The latter in the quantities failed to repress the disease. At posts which could be readily supplied with potatoes only the taint was manifested, on account of a want of liberality in the issues." And again: "Among the white troops during the five and one-sixth years covered by the statistics, 30,714 cases of scurvy were reported; and 383 deaths were attributed directly to that disease."

In the present war, Harvier[9] has reported that he was surprised to find that among some 800 troops of which he had charge, at least 95 per cent. had scurvy in the spring of 1917, and that since then epidemic centers have been recognized outside of this sector.[10]

While I do not wish to overestimate the importance of this disorder, I do wish to lay stress on the fact that it is a disorder that must be considered both in civil and in military practice, and that unless we distinguish between those foodstuffs which possess and those which do not possess antiscorbutic value, scurvy will cease to be an exceptional disease. In this regard it may be of advantage to summarize some personal experiences with various antiscorbutics, a detailed account of which will be reported elsewhere. We have found that the bran and germ of the wheat seed and brewers' yeast—substances which are so effective in preventing beriberi—are of no value in warding off scurvy. Dehydrated vegetables retain but little of their antiscorbutic power. We have employed dried carrots in two cases of infantile scurvy, and have found it lacking in curative power. It will be remembered from the quotation cited above that such was the experience in the army in the Civil War. The vegetable which we tested had been heated to a temperature of only from 130 to 135 F. and was attractive in appearance and in flavor. However, "the accessory food factor" had evidently been destroyed. It was employed some weeks after drying, having been kept during the interval in paraffined bags. Feeding experiments with animals that were fed with dehydrated vegetables obtained from various sources led to the same result. We do not, by any means, wish to deprecate the use of dehydrated vegetables, for we appreciate their food value and the great advantage that they possess on account of their small bulk. However, I would emphasize the fact most strongly that they cannot be considered the food equivalent of fresh vegetables, and that unless they are given in conjunction with fresh vegetables, fresh fruit or other antiscorbutic, the dietary will induce scurvy. It is quite possible that improved methods of preparation, as regards the temperature or the state of moisture in connection with the dehydration may make it possible to overcome this limitation.

The same defect that applies to dried vegetables seems to hold in regard to fruits. From personal experience, at least, I can state that prunes, which are used so extensively in the dietary of infants, possess practically no antiscorbutic power. In this connection I may add that the banana, which would be of great value in this respect, on account of its ready preservation throughout the winter, seems to be singularly poor in antiscorbutic power.

It is clear that there is a need, not only of an exact inventory of antiscorbutic foodstuffs, such as has been recently undertaken by the Lister Institute,[11] but of efforts directed to enlarge their number. Looking toward this end, I suggested a few years ago the use of the orange peel, instead of or in conjunction with the juice of the orange, in the dietary of infants who are not receiving fresh food. Since this time I have made use of an infusion of the peel[12] in a large infant asylum, and found it entirely satisfactory. I bring this forward as a suggestion for making use of a waste food product. At a time when oranges are so expensive, and the cost of food has become such a serious item, both for the individual and for institutions, it seems as if this suggestion may be welcomed by the housewife and baby welfare stations. Some arrangement seems possible whereby hotels would save these orange peels for this purpose. By this procedure we obtain about twice the quantity of antiscorbutic material from the orange.

In closing I wish to revert to a subject I mentioned in the early part of this paper, namely, that orange juice, boiled and slightly alkalinized with normal sodium hydroxid, constitutes an excellent antiscorbutic agent for intravenous use. It can be given in doses of 1 ounce without occasioning the slightest reaction. This measure is of interest from the standpoint of the pathogenesis of this disorder, and on account of its rapidity of action might be of therapeutic value in combating a large number of cases of scurvy in the advanced stage of the disease.

There are some who are of the opinion that scurvy is of bacterial origin, that it is indeed an infectious disease. This point of view was maintained by the famous Boerhaave and supported by Villemin in the seventeenth century; it is held by many of the physicians in Russia today, and has been emphasized in a recent study on experimental scurvy.[5] To my mind, when an invasion of micro-organisms occurs it is to be regarded as secondary in nature and merely grafted on the nutritional disorder. I bring this aspect of the subject forward at this time to show the important relationship between nutrition and infection, and furthermore to illustrate by means of this example how simple foodstuffs are able to prevent and to cure a systemic infection. In the case of scurvy the fresh vegetables or fruits protect the tissues, not so much by increasing the immunity of the body fluids, but, as I shall show elsewhere, by rendering normal and impermeable the mucous membranes. This constitutes a most remarkable instance of the broad scope of dietetic therapy.

16 West Eighty-Sixth Street.

7. Lind, James: Treatise on the Scurvy, London, 1772, p. 178.
8. Medical and Surgical History of the War of the Rebellion, Washington, 1888, Part III, pp. 683-684.
9. Harvier, P.: Paris méd., 1917, **7**, 394.
10. Undoubtedly scurvy has increased recently both in the civil and military population of the warring countries. We read of a marked increase of this disorder in the Poor Law hospital in Glasgow (Lancet, London, 1917, **2**, 21) as well as in the Poor Law infirmary of Newcastle (Brit. Med. Jour., 1917, **2**, 46). In both instances this increase is attributed to replacing potato in the dietary by bread. From Russia comes a report of the occurrence of 500 cases in Petrograd (Russk. Vrach, 1916, **15**, 1216). During the spring of 1917, according to Ferrari, an outbreak associated with neuritis invalided Italian troops on active service (Gazz. d. osp., 1917, **38**, 778).
11. Chick, T., and Hume, M.: Tr. Soc. Trop. Med. and Hyg., 1917, **10**, 141.
12. The orange peels are washed, grated, and added to twice their volume of boiling water. This is allowed to stand over night, then strained and is ready for use. Sugar is added when necessary to make it palatable.

A STUDY OF THE DIET OF NONPELLAGROUS AND OF PELLAGROUS HOUSEHOLDS

IN TEXTILE MILL COMMUNITIES IN SOUTH CAROLINA IN 1916 *

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In the spring of 1914, a series of investigations of pellagra was begun under the direction of the senior author which by the end of 1915 had yielded results that clearly showed the controlling influence of diet in both the prevention and the causation of the disease.[1] During the winter of 1915-1916 it was planned to supplement these in part epidemiologic but chiefly experimental investigations by a study of the relation of various factors (dietary, economic and sanitary) to the prevalence of pellagra in different types of communities. For various reasons it was decided to begin with a study of conditions in cotton mill villages, these representing one of the types in which pellagra was believed to be rather prevalent. In the present communication we present, in brief, some of the results of what we regard as an orientation study with respect to the relation of household diet to the incidence of pellagra. It is planned to present the full details in an official report of the work.

Seven villages in the northwestern part of South Carolina were the localities selected for study. None had more than 800 or fewer than 500 inhabitants. Of the households made up by this population only those of the white mill operatives were included in the study. The families of the mill officials, store managers and negro employees were not included.

PLAN OF STUDY

The investigation included two main divisions. One concerned itself with the determination of the prevalence of pellagra, the other with the collection of data relating to the family diet and income.

Prevalence of Pellagra.—For the study of the relation of household diet to pellagra it is of more than ordinary importance to secure as complete a record as possible of the prevalence of the disease. It was our opinion that reports of physicians, even with the fullest cooperation which we enjoyed, could not be depended on to give us a sufficiently full record, an opinion that subsequent experience has amply justified. Accordingly, to supply this fundamental need, a systematic search for cases by a house-to-house inspection was instituted (by G. A. W.) about the middle of April, 1916, and was continued every two weeks to the end of that year. So far as we are aware this is the first time that this expedient has been applied systematically and continuously over so long a period to the study of this disease. The confusing results of other workers in this field may in considerable measure be attributed to their having placed their main reliance on the, for this purpose, much too incomplete pellagra morbidity records supplied by reports of practicing physicians supplemented at most by a single house-to-house canvass.[2]

Diagnosis.—Only patients with a clearly defined bilaterally symmetrical dermatitis were recorded as having pellagra. In the course of the canvass, cases with well marked subjective symptoms were observed, but in the absence of a clearly defined eruption were recorded simply as "suspects." We think it important to invite attention to this definition of what, for the purpose of this study, constituted pellagra. It is the conventional clinical definition, but we feel that by thus restricting it we failed to include some cases that very probably should have been included. Another reason for inviting attention to this definition is that we (J. G. and G. A. W.) have been increasingly impressed by the suspicion of the possibility, if not the probability, that, so defined, pellagra includes at least two commonly associated but etiologically essentially distinct though closely related syndromes, namely, (1) the syndrome that is comprehended by the phrase "pellagra sine pellagra," and (2) the dermatitis or pellagra without or with only slight subjective manifestations. According to this idea or, perhaps better, suspicion, both syndromes are dependent primarily on a faulty diet; the former is to be regarded as the expression of a nutritive or metabolic failure, not perhaps entirely specific in character, and the latter as a reaction to a toxic substance or substances of a fairly specific type. The chief basis for this suspicion is the fact many times observed by clinicians that, on the one hand, the syndrome without eruption frequently occurs and recurs and each season may persist for months without recognizable eruption; and, on the other hand, that the eruption frequently occurs without or with but slight subjective manifestations.

In relating the incidence of pellagra to dietary conditions, cases were considered without regard as to whether they were first or recurrent attacks, provided only that the individual affected was a member of the household or dietary group for a period of not less than thirty days prior to the beginning of the eruption, the date of the appearance of which was assumed to mark the onset of the attack.

Dietary Data.— Our data with respect to diet relate to households and do not indicate any difference that might have existed, and in all probability did exist, in the diets of the individual members. Under the conditions of the study it was impracticable to obtain records of the diet of individuals. It was assumed that, having a knowledge of the diet of a considerable number of households, the outstanding characteristics of the diet of groups of these would be suggested in a general way, at least, when classified according to the occurrence or nonoccurrence of pellagra, economic status or other basis.

Information with respect to diet was secured by arranging with the stores at which the families principally dealt, for a record to be kept for us of every purchase of food by mill workers and members of mill workers' households during a specified period.

* Read before the joint meeting of the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

1. Goldberger, Joseph: The Etiology of Pellagra, Pub. Health Rep., 1914, **29**, 1683. Goldberger, Joseph; Waring, C. H., and Willets, D. G.: The Prevention of Pellagra, Pub. Health Rep., 1915, **30**, 3117. Goldberger, Joseph, and Wheeler, G. A.: Experimental Pellagra in the Human Subject Brought About by a Restricted Diet, Pub. Health Rep., 1915, **30**, 3336.

2. Siler, J. F.; Garrison, P. E., and MacNeal, W. J.: A Statistical Study of the Relation of Pellagra to Use of Certain Foods and to Location of Domicile in Six Selected Industrial Communities, Arch. Int. Med., September, 1914, pp. 292-373. Jobling, J. W., and Petersen, William: Epidemiology of Pellagra in Nashville, Tennessee, I, Jour. Infect. Dis., 1916, **18**, 501-567; II, ibid., 1917, **21**, 109-131.

Immediately at the close of the selected period, trained enumerators under the immediate direction and supervision of one of us (E. S.) were sent to the village to ascertain the composition of each household with respect to the age and sex of the individuals included during the period and to determine the quantity and value of the articles of food obtained from sources other than the stores where purchase records were secured.

In order that dietary data may properly be related to pellagra incidence, it is clearly necessary that they be representative of the season immediately anterior to or, at least, coincident with the incidence of the disease—the season, that is, when more than at any other time the diet, if it have any relation to the incidence of the disease, may be expected to be most distinctively pellagra-producing, just as it may reasonably be expected that the diet is most distinctively pellagra-preventing at the season immediately anterior to and coincident with the rapid decline in incidence and the rapid clinical improvement of active cases. Curiously enough, in no previous study, so far as we are aware, has this vitally important seasonal factor been considered, and we venture to suggest this as one of the important contributing elements in the failure of previous American workers to discover any definite, significant relationship between diet and the incident of pellagra.

With the seasonal curve of incidence of the disease in mind, it was assumed that a record of the diet for the season between April 15 and June 15 would comply with the above mentioned requirement. It being manifestly impracticable to secure a record of the complete food supply of each household for this entire season, it was necessary to restrict ourselves to a sample period for which an accurate record would be practicable and which would be fairly representative of the diet of the season. For these and other reasons a fifteen-day sample or cross-section period was selected. As it was not feasible, with the limited personnel available, to cover all seven villages in the same fifteen-day period, the record of the food supply was secured in successive sample periods for single and pairs of villages, all seven villages being covered during the season April 15 to June 16. In all we obtained records of the food supply of 798 households with an aggregate population of 4,399 individuals.

The data thus secured are not, it should be noted, records of consumption but, rather, records of household food supply for a fifteen-day sample period. Since, however, but few of the households purchased in quantities large enough to constitute a supply for more than a fifteen-day period, the data, for practical purposes, may be considered as records of consumption plus refuse and waste.

In the computation of these data, the supply of any article or group of articles of food obtained by a household or group of households has been expressed in quantity per adult male unit, the Atwater[3] scale of food requirements for the sexes at different ages being used for this purpose.

In the analysis of our data, account is taken of several factors which might tend to obscure the results of comparisons between pellagrous and nonpellagrous households. Thus, some households for which we secured food records moved away soon thereafter and so passed from observation. Such might appear to have been free from pellagra, though in reality one or more cases may conceivably have developed in some of them shortly after passing from observation. Again, by restricting the diagnosis of pellagra to cases presenting a definite eruption, the result was that cases with poorly defined eruption and cases clinically pellagra but without eruption were, as already stated, not included, so that some of the households appearing in our records as nonpellagrous should perhaps more correctly have been classed as pellagrous. Another factor tending in some measure to obscure the results of the comparison of groups arises from the fact that in a few of the households classed as pellagrous the pellagra occurred late in the year, at a considerable time after the "sample" period; in such it is manifestly possible that the diet records were not fairly representative of the conditions in the period immediately preceding the onset of the attack. Accordingly, in the following comparisons of nonpellagrous with pellagrous households with respect to the "sample" of the diet in the season between April 15 and June 16, there have been included only those "nonpellagrous" households which continued under observation from April 15 to at least Oct. 1, 1916, and in which no one with suspicious symptoms was observed, and only those "pellagrous" households in which one or more cases of pellagra with clearly defined bilaterally symmetrical dermatitis occurred before Aug. 1, 1916, that is, not too long after the sample of the diet was recorded.

COMPARISON OF HOUSEHOLD DIETS

We have studied the diets of various groups of the households for which data were secured, but within the limits of the present paper can consider only the most representative types. For this purpose we have prepared Table 1, in which is shown the approximate average daily supply of the various articles of food entering into the diets of four groups of households, of which two are nonpellagrous and two pellagrous. The diets of pellagrous households here presented are, so far as known, the first in the literature giving a detailed quantitative statement of supply for a sample period of the season immediately anterior to or coincident with the peak of seasonal incidence of the disease.

For the sake of simplicity the diets are distinguished as Diets 1, 2, 3, and 4, and the respective groups of households will be similarly referred to. Diets 1 and 2 are those of nonpellagrous, 3 and 4 of pellagrous households. Of the diets of the nonpellagrous groups, Diet 1 is that of households belonging to the highest income group of families (from $14 to about $20 per adult male unit per fifteen-day period), while Diet 2 is that of households belonging to the lowest income group (less than $6 per adult male unit per fifteen-day period). Of the diets of the pellagrous groups, Diet 3 is that of households having one or more cases each, while Diet 4 is that of households with a minimum of two cases each. Economically, Group 3 is of the same low class as Group 2. Of the households comprising Group 4, fully three fourths are of the same economic class, and are included in Group 3. It follows, therefore, that economically Group 4 is very close both to Group 3 and to Group 2.

From the point of view of pellagra incidence as modified by the influence of economic status, Groups 1

3. Atwater, W. C.: Principles of Nutrition and Nutritive Value of Foods, Farmer's Bull. 142, Washington, D. C., 1915, p. 33.

and 4 may be considered as representing extreme contrasts, and accordingly Diets 1 and 4 may be expected to represent, and as will be seen, do represent, extreme types. The indications afforded by comparing them, however, must, on account of the economic factor, be checked and interpreted in the light of the indications furnished by comparisons between Diet 2 on the one hand and Diet 3 or 4, or both of these, on the other.

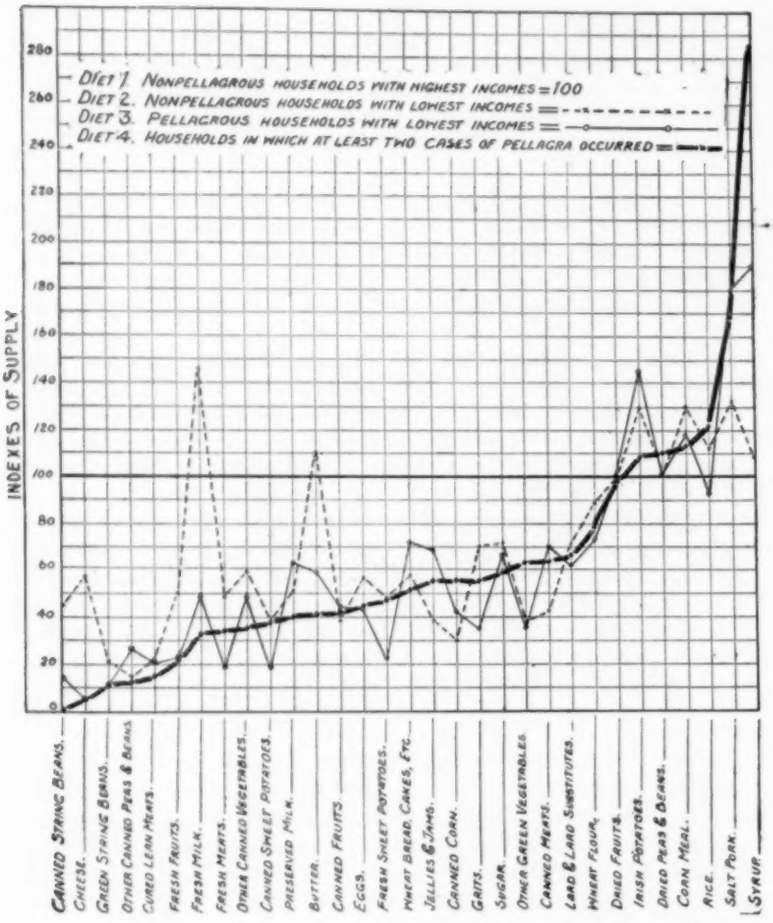

Chart 1.—Relative average daily supply of various articles of food of groups of nonpellagrous and of pellagrous households in seven cotton mill villages of South Carolina during a fifteen-day period between April 15 and June 16, 1916 (Table 1).

An examination of Table 1 and the graph (Chart 1) based thereon at once makes evident similarities and differences between the diets. The indications afforded by this examination are obscured by the confusing effect of quantitatively apparently unimportant single articles, such as cheese, for instance, and by the substitution of increased quantities of one article in one diet for a related food in another as, for instance, the substitution of salt pork for lard, and of syrup for sugar. In order to minimize these obscuring and confusing factors, related foods were combined into groups and the fuel value of each such group used as a measure of its importance in relation to the corresponding groups in the other diets.

The resulting groups, the fuel value of each, and the total caloric value of the supply in each diet are shown in Table 2, and the relative importance of corresponding groups in the graph (Chart 2) based on this table.

Considering the diets, first of all, with respect to total fuel supply, we find that the diets (3 and 4) of the pellagrous groups with 3,288 and 3,310 calories, respectively, are essentially identical in this regard, but clearly below that of either of the diets (1 and 2) of the nonpellagrous groups having 4,267 and 3,836 calories, respectively. As between the diets of the nonpellagrous groups, that of the group of poorer households (Group 2) appears to provide somewhat less energy than that of the group of households with highest income (Group 1). It is to be noted, however, that both of these as well as those of the pellagrous groups, even after making due allowance for waste, compare favorably with recognized standards, particularly so with the standard recommended by Chittenden.[4] It would follow, therefore, that the fuel value of the diet cannot be considered as in itself an *essential* factor in relation to the incidence of pellagra.

Turning now to details (Table 2 and Chart 2), we find that the diets (3 and 4) of the pellagrous households resemble each other closely not only, as already pointed out, with respect to total fuel value, but also with respect to the calories furnished by each of the seven groups into which the foods enumerated in Table 1 have been combined. By comparing with Diet 1 we find that the lower fuel values of Diets 3 and 4 are due mainly to a deficiency in supply of three classes of foods, namely, (1) meats, milk, etc. (the animal protein foods); (2) green vegetables, and (3) sugar, syrup, etc.

Considering only the contrast between Diets 3 and 4 on the one hand and Diet 1 on the other, the interpretation would seem to be suggested that the freedom from pellagra enjoyed by the nonpellagrous households with Diet 1 was associated with a more liberal supply of some one or some combination of the foods in the groups in which the pellagrous households with Diets 3 and 4 are notably short. If, however, we examine Chart 2 further we find that the diet (Diet 2) of the group of nonpellagrous households of lowest income at once resembles closely Diets 3 and 4 of the groups of pellagrous households, and differs from the diet (Diet 1) of the nonpellagrous households of highest income in substantially the same degree as do Diets 3 and 4, with respect to the supply from all groups of foods but one. This one is

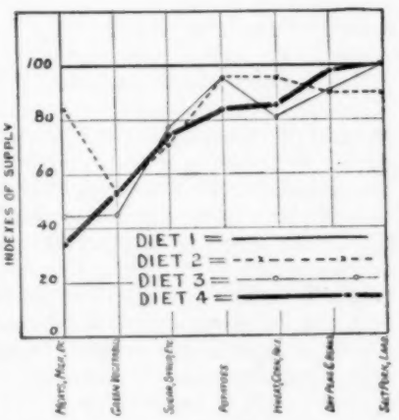

Chart 2.—Relative caloric value of groups of foods constituting the average daily supply of nonpellagrous and of pellagrous households in seven cotton mill villages of South Carolina during a fifteen-day period between April 15 and June 16, 1916 (Table 2).

4. Chittenden, cited by Lusk, Graham: The Elements of the Science of Nutrition, Ed. 3, Philadelphia, 1917, p. 347.

the group comprising the lean meats, milk, butter, cheese and eggs, the supply from which in Diet 2 is notably greater than in Diets 3 and 4 and but little short of that in Diet 1. Clearly, then, the freedom from pellagra of the households with Diet 2 is associated with a more liberal supply from this one group of foods. It would appear to follow, therefore, that the freedom from pellagra of the households of highest income (with Diet 1) can be considered as associated significantly only with the more liberal supply from the same source.

With the view of testing this clearly indicated association further, we have analyzed our data with respect to the relation of pellagra incidence to variation in the supply of single foods.

Fresh Meat.—In the study of the relation of meat supply to incidence, we found that of 196 households whose average daily supply of milk was so small as not notably to influence pellagra incidence, that is, less than 250 gm. per adult male unit, 126 had a supply of fresh meat averaging in each less than 30 gm. per adult male unit per day, and of these, twenty-five, or 19.8 per cent., had one or more cases of pellagra; whereas of seventy that had a supply of fresh meat averaging in each over 30 gm. per adult male unit per day, only four, or 5.7 per cent., were pellagrous.

Milk.—With respect to fresh milk we found that of 368 households whose supply of fresh meat was minimal, that is, with an average of less than 30 gm. per adult male unit per day, 207 had a daily supply of fresh milk averaging less than 500 gm. per adult male unit per day, and of these, thirty-four, or 16.4 per cent., had one or more cases of pellagra; while of the remaining 161 having a daily supply of fresh milk averaging over 500 gm. per adult male unit, eight, or only 5 per cent., were pellagrous. The association of a markedly lower incidence with a liberal milk supply is indicated in another way. Of 127 households owning cows which supplied milk during the three months preceding the date of the canvass in the spring of 1916, two, or 1.6 per cent., were pellagrous; whereas of 451 not owning such cow, forty-seven, or 10.4 per cent., had one or more cases of pellagra. Even when due allowance is made for the possible influence of fresh meat or other possibly preventive food in the diet of the cow-owning families, the relative freedom from pellagra of such families is nevertheless very striking and significant. Its significance is enhanced when we note that in the group of no-cow-owning families, some enjoyed a liberal supply of milk by purchase from cow-owning families or other dairy.

TABLE 1.—APPROXIMATE AVERAGE DAILY SUPPLY OF VARIOUS ARTICLES OF FOOD OF SPECIFIED GROUPS OF NONPELLAGROUS AND OF PELLAGROUS HOUSEHOLDS IN SEVEN COTTON MILL VILLAGES OF SOUTH CAROLINA DURING A FIFTEEN-DAY PERIOD BETWEEN APRIL 15 AND JUNE 16

1916

Articles of Food	Household Groups			
	Nonpellagrous		Pellagrous	
	With Highest Income† (Diet 1) Gm.	With Lowest Income‡ (Diet 2) Gm.	All with Lowest Income; § with One or More Cases (Diet 3) Gm.	Majority with Lowest Income; ¶ with Two or More Cases (Diet 4) Gm.
Fresh meats	48.9	19.9	9.4	16.3
Cured lean meats	54.0	11.8	11.1	8.1
Canned meats	25.1	10.6	17.5	15.7
Eggs	60.5	38.9	30.6	31.1
Fresh milk	379.3	554.0	187.2	126.9
Preserved milk	4.5	2.3	2.8	1.8
Butter	27.2	30.2	16.0	11.2
Cheese	3.6	2.0	0.2	0.2
Dried peas and beans	31.1	31.4	31.4	34.1
Canned peas and beans#	12.1	1.8	3.3	1.6
Wheat flour	445.4	398.6	323.1	351.5
Wheat bread, cakes and crackers	18.1	10.3	13.1	9.4
Corn meal	127.1	164.9	149.8	144.3
Grits	9.4	6.6	3.3	5.2
Canned corn	11.5	3.5	4.8	6.3
Rice	4.5	5.4	4.2	5.5
Salt pork	38.6	50.7	69.5	65.2
Lard and substitutes	52.8	37.1	32.0	34.7
Green string beans	31.7	6.6	3.5	3.4
Canned string beans	9.1	4.1	1.3	0.0
Other green vegetables	90.6	33.9	32.3	57.4
Other canned vegetables	56.2	32.9	27.8	19.9
Fresh fruits	42.3	21.1	9.7	10.1
Dried fruits	9.7	9.7	9.7	9.5
Canned fruits	37.4	14.5	16.6	15.7
Irish potatoes	48.9	63.7	71.0	53.1
Fresh sweet potatoes	7.9	3.9	1.7	3.9
Canned sweet potatoes	7.9	3.1	1.4	3.1
Sugar	55.6	38.6	37.1	32.0
Syrup	7.9	8.6	15.1	22.6
Jellies and jams	10.9	4.2	7.5	6.0
All other foods (cost in cents)	1.7	1.5	1.2	0.9

† Households composed of 209.4 adult male units.
‡ Households composed of 730.7 adult male units. Data were available for the following number of adult male units for the articles of food specified: fresh milk, 713.1; green vegetables, 726.3; dried fruits, 726.6.
§ Households composed of 134.6 adult male units. Data were available for only 117.1 adult male units with respect to fresh milk and butter.
¶ Households composed of 117.5 adult male units.
# Exclusive of canned string beans.

TABLE 2.—APPROXIMATE CALORIC VALUE OF VARIOUS GROUPS OF FOODS* CONSTITUTING THE AVERAGE DAILY SUPPLY OF SPECIFIED GROUPS OF NONPELLAGROUS AND OF PELLAGROUS HOUSEHOLDS IN SEVEN COTTON MILL VILLAGES OF SOUTH CAROLINA DURING A FIFTEEN-DAY PERIOD BETWEEN APRIL 15 AND JUNE 16, 1916

Groups of Foods	Nonpellagrous Households		Pellagrous Households	
	With Highest Income (Diet 1) Calories†	With Lowest Income (Diet 2) Calories†	All with Lowest Income; with One or More Cases (Diet 3) Calories†	Majority with Lowest Income; with Two or More Cases (Diet 4) Calories†
Meats (exclusive of salt pork), eggs, milk, butter, cheese	762	639	338	270
Dried and canned peas and beans (exclusive of canned string beans)	126	113	115	123
Wheaten flour, bread, cakes and crackers, cornmeal, grits, canned corn, rice	2,162	2,082	1,752	1,846
Salt pork, lard and lard substitutes	741	673	748	745
Green and canned vegetables (exclusive of canned corn), green and canned string beans, fruits of all kinds	121	71	60	69
Irish and sweet potatoes	55	53	52	46
Sugar, syrup, jellies and jams	210	205	222	217
All foods	4,267	3,836	3,288	3,310

* Foods as purchased less nonedible portion. No deduction has been made for waste of edible portion. The computation of edible portion and the calorie value thereof is according to analyses published in Bulletin 28 (Revised Edition), U. S. Department of Agriculture (Atwater and Bryant: The Chemical Composition of American Food Materials). Because of the form in which it was necessary to obtain the data, the compilations are approximately correct, not absolutely exact.
† Calories per adult male unit.

It may here be recalled that Siler, Garrison and MacNeal,[2] as a result of their studies, concluded that the daily use of milk seemed to diminish to some extent the danger of contracting pellagra. When, however, one examines the data on which they base this conclusion, it quickly becomes apparent that in reality no conclusion was permissible or, at best (see their

Tables 82 to 88), the paradoxical conclusion that it is the use of milk "rarely" as well as "daily" but not "habitually" that diminishes the danger of contracting pellagra.

Our data did not permit of satisfactory study of the other foods, butter, cheese and eggs, of the same group. We hope that the larger mass of data collected in 1917 will prove to be more suitable for such analysis. It should be noted, however, that the indications afforded by the analysis presented with respect to fresh milk should be regarded as, in a general way, also representative of butter, fresh milk appearing in the diet of these people in the form, for the most part, of home-churned buttermilk and butter.

Dried Peas and Beans.—Analyses of the relation of pellagra incidence to the use of a number of other foods were made by us, but we shall at this time refer only to those in relation to dried peas and beans. Analysis of our data with respect to this group showed no significant variation in incidence with variation in supply, a fact which is clearly suggested in Table 2 and Figure 2. The present study fails to confirm, therefore, deductions from epidemiologic observations made by the senior author about four years ago with respect to the apparently important preventive value of the common varieties of dried peas and beans (cowpea, white bean, pink bean, lima bean). It is important to note, however, that in the light of various recent studies (Daniels and Nichols,[5] Daniels and Loughlin,[6] McCollum[7] and Osborne and Mendel[8]), this does not necessarily apply to other species, and probably still less to the immature or green stage, that is, to the green string beans. Indeed, our observations tend to indicate that the green string bean plays a rôle distinctly different from (probably diametrically opposite to) that of the mature bean in relation to the prevalence of pellagra. On this point, however, we hope to be able to present at a later date the more definite results of a continuation study now nearing completion.

DIETARY FACTORS

Calories.—Thus far we have considered the diets of nonpellagrous and of pellagrous households from the point of view, chiefly, of discovering possibly significant differences of a general character. It will be of interest now to consider briefly the more intimate make-up of these diets. Attention has already been called to their calorific value, which was found to compare favorably with recognized standards.

Protein.—Turning to protein, we find that Diet 1 supplies approximately 126 gm.; Diet 2, 105 gm.; Diet 3, 84 gm., and Diet 4, 85 gm. From this we see that the protein supply of the two groups of pellagrous households (Groups 3 and 4) is identical and also considerably smaller than that of the groups of nonpellagrous households, particularly of the households of highest income (Group 1). As with the fuel value of the diets, the supply of protein (even after deducting for waste) conforms fairly well to recognized standards.[9] This would suggest the interpretation that the total protein supply is in itself not an *essential* factor in relation to the prevalence of pellagra.

In view of the importance of the biologic quality of the protein, we have examined the sources of the protein supply of each of the diets here considered and find that in Diet 1, approximately 40 per cent. is derived from animal foods; in Diet 2, approximately 33 per cent.; in Diet 3, approximately 28 per cent., and in Diet 4, approximately 25 per cent. On the other hand, Diet 1 derived approximately 57 per cent. of its protein from cereals (wheat, corn and rice) and the common (including the canned) dried peas and beans; Diet 2, approximately 64 per cent.; Diet 3, approximately 68 per cent, and Diet 4, approximately 71 per cent. In other words, the protein supply of the nonpellagrous households tends to include, on the one hand, a larger proportion derived from animal foods, and on the other, a somewhat smaller proportion from cereals and dried legumes than does the protein supply of pellagrous households. With the work of Osborne and Mendel[10] and especially the recent work of McCollum[7] and his associates in mind, these facts would suggest that the protein mixture in the diets of the nonpellagrous households is likely to be of a somewhat better character than that in the diets of the pellagrous groups.

Carbohydrate and Fat.—With respect to the carbohydrates and fats considered together, the supply of these constituents, as measured by total calories from these sources, is identical in the diets of the pellagrous households but smaller in these than in those of the nonpellagrous. The proportion of total calories in the respective diets derived from these constituents is, however, essentially identical for all here considered. It is of interest to note further that the supply of carbohydrate, apart from fat, is somewhat smaller in the diets of the pellagrous than in those of the nonpellagrous households. This does not seem to support the suggestion made by Deeks[11] that the production of pellagra is dependent on the excessive consumption of carbohydrates.

With respect to the source of the fat supply, it is of interest and importance to note that, as might have been anticipated from what has gone before, both nonpellagrous groups enjoy a larger supply from such sources as milk and butter than do the pellagrous households.

Vitamins.—A study of Table 1 discloses the fact that with respect to recognized sources of the fat-soluble vitamin, the pellagrous households tend to be at a distinct disadvantage as compared with the nonpellagrous. This disadvantage is especially marked with respect to such sources as milk and butter. It follows, therefore, that the diet of the nonpellagrous includes decidedly more of the essential, fat-soluble vitamin (or vitamins?) than does that of the pellagrous.

As in the case of the fat-soluble, so with the water-soluble vitamin (or vitamins?), we can estimate the relative supply of this factor in the different diets only as these include a smaller or larger supply of the foods known to be rich in this constituent. Judging in this manner, the indications afforded by Table 1 are that the pellagrous have a somewhat smaller supply of this

5. Daniels, A. L., and Nichols, M. B.: The Nutritive Value of the Soy Bean, Jour. Biol. Chem., 1917, **32**, 91-102.
6. Daniels, A. L., and Loughlin, R.: Feeding Experiments with Peanuts, Jour. Biol. Chem., 1918, **33**, 295-301.
7. McCollum, E. V.: The Supplementary Dietary Relationships Among Our Natural Foodstuffs, THE JOURNAL A. M. A., May 12, 1917, pp. 1379-1386.
8. Osborne and Mendel: The Soy Bean as Food, Jour. Biol. Chem., 1917, **32**, 369-376.
9. Lusk, Graham: The Elements of the Science of Nutrition, Ed. 3, Philadelphia, 1917, p. 345.
10. Mendel, L. B.: Nutrition and Growth, THE JOURNAL A. M. A., May 8, 1915, pp. 1539-1547.
11. Deeks, W. E.: Pellagra in the Canal Zone, Med. Rec., New York, 1912, **81**, 566-569.

dietary essential than do the nonpellagrous households, though it would seem that the disparity in this instance is probably much less marked than in the case of the fat-soluble vitamin.

Inorganic Constituent.—Reasoning in a somewhat similar way, and recalling particularly that the milk supply of the nonpellagrous households is notably more liberal than that of the pellagrous households, it would seem clearly indicated that the mineral constituent will tend to be superior (less likely to be defective) in the diet of the nonpellagrous than in that of the pellagrous household.

SUMMARY

To supplement the studies, chiefly experimental, of 1914 and 1915, a study was begun, in the spring of 1916, of the relation of various factors to pellagra prevalence in cotton-mill village communities in South Carolina. This paper presents briefly some of the results of the phase of the study dealing with the relation of household diet to pellagra incidence.

Pellagra incidence was determined by a systematic biweekly house-to-house search for cases carried on from April 15, 1916, to Dec. 31, 1916.

The diagnosis of pellagra was restricted to cases presenting a definite, bilaterally symmetrical eruption. It is suggested that, so defined, pellagra includes at least two commonly associated, etiologically distinct, though closely related, syndromes.

Data relating to household diet were secured by obtaining records of sale from the principal stores for a fifteen-day sample period during the season immediately anterior to or coincident with the incidence of the attack as suggested by the seasonal curve, supplemented by inquiries by a trained investigator.

Comparisons of diets of nonpellagrous with those of pellagrous households clearly showed that:

1. The nonpellagrous enjoyed a larger supply of the animal protein foods (lean meat, milk including butter, cheese and eggs).

2. Varying supplies of fresh meat were associated with a corresponding (inverse) variation in the incidence of pellagra.

3. Varying supplies of milk were associated with a corresponding (inverse) variation in the incidence of pellagra.

4. The calorific value of the diets of pellagrous households was somewhat less than that of nonpellagrous households, but this, nevertheless, conformed to recognized standards and could therefore not be considered as an *essential* factor in relation to the incidence of pellagra.

5. The total protein supply in the diets of the pellagrous households was somewhat less than in that of nonpellagrous households, but was not below Chittenden's standard, and therefore a deficiency in total protein would seem not to be an *essential* factor in relation to the incidence of pellagra.

6. The proportion of protein from animal food tends to be somewhat smaller, and that from cereals and the common mature peas and beans somewhat larger in the diets of the pellagrous than in those of the nonpellagrous households, and therefore the protein in the diet of the nonpellagrous was likely to be of somewhat better quality than that in the diets of the pellagrous households.

7. The diets of the pellagrous households included somwhat less of the carbohydrates than did that of the nonpellagrous, and therefore the production of pellagra is not necessarily dependent on an excessive consumption of this food constituent.

8. The diets of the pellagrous households had a decidedly smaller supply of the fat-soluble and likewise a somewhat smaller supply of the water-soluble vitamin than the diets of the nonpellagrous households.

9. The mineral constituent of the diets of the nonpellagrous households was likely to be superior—less likely to be defective—than that of the pellagrous households.

CONCLUSIONS

1. The indications afforded by this study would seem very clearly to suggest that the pellagra-producing dietary fault is the result of some one or, more probably, of a combination of two or more of the following factors: (1) a physiologically defective protein supply; (2) a low or inadequate supply of fat-soluble vitamin; (3) a low or inadequate supply of water-soluble vitamin, and (4) a defective mineral supply. In this connection it is of interest to note that McCollum, Simmonds and Parsons,[12] as a result of their studies of faulty diets in rats, believe that pellagra is primarily associated with the unsatisfactory character of three dietary factors, namely, a shortage of the "fat-soluble A," the faulty character of the inorganic moiety, and the relatively poor quality of the protein mixture.

2. The somewhat lower plane of supply, both of energy and of protein, of the pellagrous households, though apparently not an essential factor, may, nevertheless, be contributory by favoring the occurrence of a deficiency in intake of some one or more of the essential dietary factors, particularly with diets having only a narrow margin of safety.

3. The pellagra-producing dietary fault may be corrected and the disease prevented by including in the diet an adequate supply of the animal protein foods[13] (particularly milk, including butter, and lean meat).

12. McCollum, E. V.; Simmonds, N., and Parsons, H. T.: Pellagra-Producing Diets, Jour. Biol. Chem., 1918, **33**, 411-423.

13. The possibility that other classes of foods may also serve this purpose is, of course, not excluded.

Decline in Infant Death Rate.—An infant mortality survey by the New York Milk Committee has been made public which shows that the efforts of the various agencies engaged in infant welfare work, as well as the work of the New York Milk Committee has been effective in reducing the infant death rate in New York City. The survey covers the calendar year 1917 for which the death rate was 88.8 per 1,000 living births. In 1907 the rate was 135.8. The number of infant deaths under 1 year of age for the year 1917 was 12,568 as against 16,000 in 1907. The report of the Milk Committee also contains figures from 163 of the largest cities which show with one exception decreases in the death rate. The lowest mortality for cities of 100,000 is found at Omaha and Seattle, which have 59.2 and 59.4, respectively. The low rate for the country is found at Alameda, Calif., where the rate is 40.7. Other cities of 50,000 that are only a fraction above this level are Brookline and Everett, Mass., La Crosse, Wis., and Berkeley, Calif. The highest mortality of the country is at Nashville, Tenn., which has a rate of 182.2 with a population of 110,364. Chicago exceeds New York in infant mortality by nearly 18 points and Philadelphia by 21 points. Other cities having an infant death rate of over 100 per thousand living births are Baltimore, 119.3; Pittsburgh, 116.2; Detroit, 103.6; Buffalo, 103.7; New Orleans, 113.5; Jersey City, 113.8; Louisville, 110.5; Syracuse, 101.9; Birmingham, 147.5; Memphis, 145.7; Richmond, 134.5; Fall River, 153.8; Grand Rapids, 134.9, and Albany, 103.2. Boston has 98.9.—*Medical Record.*

DIET OF THE U. S. ARMY SOLDIER IN THE TRAINING CAMP*

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The Food Division of the Surgeon-General's Office has completed detailed surveys of 227 messes scattered among more than 40 training camps in this country. Results of these surveys have been studied with some care and certain conclusions reached regarding the suitability of the Army ration as now provided.

Before proceeding to a discussion of these surveys, the messing system of the U. S. Army should be briefly described. Soldiers are fed by companies or units of corresponding size, such as batteries of artillery, troops of cavalry, squadrons of aviators, etc. The responsibility for proper feeding is placed by the Army Regulations squarely on the company commander. As a rule, the company commander details the supervision of the mess to a commissioned officer, commonly a second lieutenant, known as the mess officer. The purchasing agent for the company is a sergeant known as the mess sergeant. Certain articles of food are issued by the camp quartermaster every day. These are fresh meat and bread from the camp bakery. Other articles of food are issued in ten day periods on requisition by the mess sergeant. If, however, the sergeant desires to purchase something not carried by

TABLE 1.—GARRISON RATION

	Ounces		Ounces
Meat	20	Flour	18
Beans	2.4	Potatoes	20
Prunes	1.28	Coffee	1.12
Sugar	3.2	Milk	0.5
Lard	0.64	Butter	0.5
Syrup	0.32		

Salt, pepper, cinnamon, vinegar and flavoring extract, a small fractional part of an ounce.

the quartermaster, he can obtain money in lieu of a certain undrawn portion of the ration for his men and purchase in the local market. The practice of different camps in this respect varies. Where the local markets are good, as much as 50 per cent. of the value of the ration may, on order of the commanding officer, be spent locally. The average, however, is not in excess of 35 per cent., the remaining 65 per cent. being issued by the camp quartermaster.

The garrison ration (Table 1) is the basis of feeding the soldiers in training camps. For calculation of the value of the ration, certain definite substitutions are made. For example, 70 per cent of the meat component is issued as fresh beef, 20 per cent. as ham, and 10 per cent. as bacon; 50 per cent. of the bean component is calculated as beans, and 50 per cent. as rice; 70 per cent. of the potato component as potatoes, 20 per cent. as onions, and 10 per cent. as tomatoes, etc.

The average value of the ration in the training camps since their organization last fall has been in the neighborhood of 39 cents per man per day.

Officers of the Food Division, organized as survey parties, have visited all of the larger camps once—many of them twice—twelve aviation camps, and a number of special camps, such as embarkation camps and quartermaster camps. In all, the number of men whose messes have been studied totals in the neighborhood of 60,000. Besides estimating the quantity of food supplied, wasted and consumed, these parties have made inspections of the food both in subsistence stores and at the mess houses and have given a considerable amount of instruction to mess officers and mess sergeants in the proper use of foods. The amount of food is determined by making an inventory of the stock on hand at the mess house at the beginning of a definite period, keeping account of all accessions to stock within the period, and a second inventory at the close. Concurrently the edible waste is separated, weighed, mixed, sampled and analyzed. These analyses have been made through the courtesy of Dr. Alsberg and his co-workers at the Bureau of Chemistry laboratories in several of the large cities. When the reports of these analyses are received, suitable deductions are made for wastage, and the actual consumption of food in grams of protein, fat and carbohydrate per man per day is computed.

TABLE 2.—STATISTICAL SUMMARY OF NUTRITIONAL SURVEYS

Nutrients	Food per Man per Day: Supplied	Wasted	Consumed	Distribution of Fuel Value Consumed, %	Wasted, %	Per Man per Day
Averages, 49 messes:						
Protein, gm.	139	12	127	14	9	Consumed cost, 41.39 c.
Fat, gm.	129	14	115	30	11	Waste cost, 3.57 c.
Carbohydrate, gm.	539	40	499	56	7	Total waste
Fuel value, cal.	3,980	343	3,637	100	9	Edible waste
Averages, 68 messes:						
Protein, gm.	139	11	128	14	8	Consumed cost, 40.82 c.
Fat, gm.	127	13	114	29	10	Waste cost, 3.51 c.
Carbohydrate, gm.	537	37	500	57	7	Total waste, 0.81 lb.
Fuel value, cal.	3,953	318	3,635	100	8	Edible waste, 0.47 lb.
Averages, 85 messes:						
Protein, gm.	139	10	129	14	7	Consumed cost, 41.53 c.
Fat, gm.	130	12	118	30	9	Waste cost, 3.41 c.
Carbohydrate, gm.	536	35	501	56	7	Total waste, 0.82 lb.
Fuel value, cal.	3,977	297	3,680	100	7	Edible waste, 0.42 lb.
Averages, 143 messes:						
Protein, gm.	139	10	129	14	7	Consumed cost, 42.75 c.
Fat, gm.	132	12	120	30	9	Waste cost, 3.10 c.
Carbohydrate, gm.	534	33	501	56	6	Total waste, 0.85 lb.
Fuel value, cal.	3,987	288	3,699	100	7	Edible waste, 0.44 lb.
Averages, 185 messes:						
Protein, gm.	138	9	129	14	7	Consumed cost, 42.17 c.
Fat, gm.	130	12	118	30	9	Waste cost, 2.99 c.
Carbohydrate, gm.	529	32	497	56	6	Total waste, 0.82 lb.
Fuel value, cal.	3,944	280	3,664	100	7	Edible waste, 0.43 lb.
Averages, 213 messes:						
Protein, gm.	138	9	129	14	7	Consumed cost, 42.75 c.
Fat, gm.	133	12	121	31	9	Waste cost, 3.00 c.
Carbohydrate, gm.	527	31	496	55	6	Total waste, 0.83 lb.
Fuel value, cal.	3,963	276	3,687	100	7	Edible waste, 0.42 lb.

In Table 2 the average amount of nutrients supplied, wasted and consumed for 49, 68, 85, 143, 185 and 213 messes is given. It will be noted that the average figures have changed but little with the different numbers of messes compiled, showing that the results actually represent average conditions. The total amount of energy supplied is just short of 4,000 calories; the amount wasted a little less than 300 calories, and the amount consumed in the neighborhood of 3,700 calories. The distribution of calories consumed for 213 messes is 14 per cent. protein, 31 per cent. fat and 55 per cent. carbohydrate. There has been a noticeable though small improvement in the amount of waste. For the first forty-nine messes studied, the amount was 9 per cent. of the total fuel value. For the 213 messes, the amount is 7 per cent. It will be noted that the cost of the ration as actually consumed is 42.75 cents, and the value of the waste is 3 cents. The reason the mess sergeant can spend 42.75 cents for food actually consumed is that the actual attendance at mess is only about 90 per cent. of the

* Read before the joint meeting of the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

total number of rations authorized. The number of rations authorized by regulations is fixed by the morning report at the beginning of the ten day period. A large number of the men, however, leave camp Saturday afternoon and do not return until Sunday night, missing three or four meals out of the twenty-one. This makes the per capita cost of food consumed considerably higher than the value of the ration.

The actual average consumption of different articles of food as computed from the reports of the Survey Parties for 227 messes is given in Table 3. The total energy accounted for in the fifty articles of food included in this list is in the neighborhood of 90 per cent. of the total consumed; the other 10 per cent. is distributed over more than 100 articles used in very small quantities each.

TABLE 3.—AVERAGE CONSUMPTION OF FOOD

	Ounces
Fresh beef	9.15
All fresh meats together	11.51
Bacon, ham, sausage and frankfurters together	2.16
Bread	7.98
Total bread, including hard bread and flour	9.87
Total other cereals, such as oatmeal, cornmeal and farina	1.25
Beans, dried	1.01
Total beans, baked beans, peas, canned peas and canned corn	2.41
Total rice, hominy, macaroni, spaghetti and corn starch	0.97
Total potatoes	12.51
Total other vegetables	2.64
Total tomatoes	1.41
Total dried fruits	1.45
Total other fruits	1.47
Coffee	1.08
Sugar	3.39
Milk, evaporated	2.05
Butter and oleomargarine	0.51
Lard and lard substitute	0.69
Syrup	0.72

It is interesting to note first, that out of the 20 ounces of fresh meat, including bone, provided by the ration, only a little more than one half is consumed as meat. Of the total bread provided by the ration, less than one half is consumed as bread. Of the total 20 ounces of potatoes provided by the ration, 12½ ounces are consumed as potatoes. The result is a much better balanced dietary than that laid down in Army regulations. In fact, it is doubtful whether any soldier could long subsist on the Army ration as provided in the regulations. In the first place, he could not eat all of the ration, unless he were doing excessively hard work such as the work of a lumberman exposed to cold. In the second place, the Army ration as laid down in the regulations would provide too much acid ash, and in the third place, it provides an excessive amount of protein for a laboring man. By means of the ration saving system, however, the soldier is not obliged to eat what the regulations prescribe. The garrison ration is simply the basis for the money value of the ration.

The question arises whether the ration should not be readjusted to a basis more nearly approaching the basis of choice as actually expressed in the last ten months' experience. If this were done, the resulting ration could be issued in kind, that is, issued alike to all the men simultaneously. The advantages would be (1) reduction of waste by obliging organizations to secure their luxuries by exercising rigid economy; (2) guaranteeing a satisfactory distribution of nutrients; (3) the possibility of centralized purchasing and consequent reduction in cost to the government, and (4) training the men on a ration basis much more nearly approaching the requirements of field conditions.

A distinction should, however, be made between such a "training ration" and the actual field ration, after the manner of all the other allied armies. For example, the British home ration, used in the training camps in England, provides only 3,400 calories, whereas the field and trench ration provides 4,250 calories. The French normal ration, used in training camps, provides 3,300 calories, the strong ration, used in actual campaign, 3,600 calories. The Italian territorial ration, used in the training period, provides 2,500 calories, while the combating rations, used in campaign, provides 3,300 calories. The present garrison ration of the U. S. Army, if selected as written in the regulations and as used in computing the value of the ration, would provide nearly 4,800 calories. This is at least 500 calories in excess of any other army ration now used by the Allied armies.

There are hopeful signs that the messing of troops in training camps will in time be treated as a hygienic measure. If it is worth while to feed an athletic squad, undergoing training, at a training table where every article of diet is carefully scrutinized by the medical director, it requires no argument to show that the soldier, in preparation for the highly specialized work of modern warfare, should be fed with equal care. Physical fitness for emergency is much more important in the case of an aviator, an artillery observer, a signal corps officer, or a tank operator than in the case of a half-back or a stroke. This attitude has already been adopted by the Air Service Division of the Surgeon-General's Office, and a special request has been made for the assignment of nutrition officers capable of exercising skilled supervision of dietaries at aviation training centers. The Food Division has already rendered much assistance to these camps. Captains Eddy, Brewster, Gephart and Joseph have visited a number of these camps and have rendered much assistance in the supervision of mess conditions. At the special request of General Pershing, all the aero squadrons, sailing for further training in England, will be instructed by the Food Division in the use of the British home ration. That ration, it will be recalled, provides only in the neighborhood of 3,400 calories per man per day as against an available 4,000 calories in the average ration supplied to American troops in training during the past eight months. Special measures of economy are necessary in order that our troops may live comfortably on this ration.

There has been much improvement in the matter of food economy in all of the training camps since last fall. A number of reports have been received; for example, from Camps Funston, Travis, Sevier, Devens and Wadsworth, showing that in certain organizations the average edible waste per man per day has been reduced to less than one-tenth pound. The average throughout all the training camps in the United States is in the neighborhood of forty-two hundredths pound.

A number of problems in connection with the nutrition of soldiers still press for solution. For example:

What is the simplest corrective of constipation in the Army?
What is the best diet for an aviator?
Is there any danger in the use of dehydrated materials, now being shipped for use of the American Expeditionary Forces?
Will prolonged subsistence on a high protein diet produce injury to the excretory organs?
Is there any dietary factor involved in the etiology of trench nephritis?

The attention of medical men, especially interested in nutrition, is invited to these and kindred problems. The Food Division has already made substantial progress in the solution of some of them, but it will welcome aid from any source.

THE CIVILIAN WAR RATION*

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Never before in the history of mankind has war called for such a universal enlistment of labor and science as in the present conflict, and never before has victory depended on the support of the civilian to the extent that it does now. In fact, victory lies as much in the hands of the civilian as in those of the soldier. While duties rest on every one, man or woman, civilian or soldier, the responsibilities of the physician, in civil life as well as in uniform, are exceptionally great in the services he is called on to render and also in the influence that he may exert at home as well as at the front.

If food is to win the war, the fact must be thoroughly impressed on the civilian population, who will respond with far greater tangible results if led to cooperate intelligently rather than by compulsion. The civilian naturally looks on the physician as a leader and has the right to expect of him the ablest and safest guidance.

It was in anticipation of the needs of this nation that, nearly a year ago, the Carnegie Institution of Washington suspended the bulk of its activities in the Nutrition Laboratory of Boston to undertake an exhaustive study of the effects on metabolism, physical and mental fitness and endurance, of reduction of the daily food allowance, such as has been forced on several of the unfortunate European nations, and such as seriously threatens to become a necessity in our own country, for the benefit of the Allied cause.

A detailed survey of the entire research will shortly appear in a monograph of the Carnegie Institution of Washington, from the pen of Dr. F. G. Benedict, director of the Nutrition Laboratory of Boston. His collaborators are Dr. Walter R. Miles, H. Monmouth Smith, and myself. I believe that the publicity of such results as relate to the nation's present food problems should not be delayed, and advantage is taken of this great opportunity to offer this information to the medical profession.

DETAILS OF EXPERIMENT

Briefly stated, the problem was to submit normal men to a reduction of the daily food allowance sufficient to cause a comparatively rapid loss of body weight, equivalent to approximately 10 per cent. of the weight of the subject at the beginning of the experimental period. Then the food allowance was to be increased and regulated to prevent any further loss of weight while maintaining this reduced body weight for several weeks. This was to be done without materially interfering with the usual daily activities and duties of the subjects. Meanwhile, the subjects were to submit to numerous tests and observations relative to their metabolism, endurance and general physical and mental efficiency.

We were fortunate to secure for this strenuous program more than twenty-five volunteers from among the students of the Y. M. C. A. College of Springfield, Mass. Their contribution to the achievement of this research has been, to say the least, a noble and patriotic one, indeed.

These subjects are grouped into three classes:

1. Diet Squad 1, of twelve subjects, who were under observation for a period of four months, during which time their diet was controlled as stated above.

2. The control squad, of twelve subjects, whose diet was not modified or controlled in any way, but who were submitted to several control tests for a period of three months.

3. Diet Squad 2, of twelve subjects, recruited almost entirely from the control squad, and who, for a period of three weeks, were placed on a practically reduced daily ration averaging about 1,400 calories net.

The investigation carried out included:

1. A strict account of all the food served to the diet squads, and a determination of its calorific value.

2. A collection of all the urine of each subject of the diet squads, in twenty-four hour periods, and frequent collections of the stools for periods of several days each.

3. Almost daily determinations of the basal metabolism of each subject in Diet Squad 1, including careful estimation of the pulse and respiration rate, total lung ventilation and alveolar carbon dioxid tension. These observations were made at the Y. M. C. A. College in Springfield in laboratories equipped for the purpose by the Nutrition Laboratory of Boston.

4. Week-end trips, made alternately by each squad, to the Nutrition Laboratory in Boston, where numerous tests, bearing on the neuromuscular processes and mental condition of each subject, were conducted.

5. In Boston, spending of the night by the entire squad in a large respiration chamber constructed for the purpose of estimating the total metabolism of entire groups of subjects collectively.

6. Also a series of observations made on the efficiency of each subject during muscular work. This was accomplished by the use of a treadmill, inclosed in a small respiration chamber.

7. In addition, observations made on the body weight, measurements of body surface, strength tests, oral, skin and rectal temperature, blood tests, including hemoglobin, red and white cell and differential counts, and blood pressure.

8. Finally, the taking of photographs and motion pictures, making a most valuable addition to the record of the results obtained.

RESULTS

The effects of the prolonged reduction in the diet dealing primarily with basal metabolism were thus summed up by Dr. F. G. Benedict:

1. A gradual reduction in weight to a point 12 per cent. below the initial weight took place during a period of from three to ten weeks, with low calories and a moderate amount of protein in the food intake. The normal demand of the men prior to the dietetic alteration ranged from 3,200 to 3,600 net calories. One squad of twelve men subsisted for three weeks on 1,400 net calories without special disturbance.

2. After the loss in weight of 12 per cent. had been reached the net calories required to maintain this weight averaged about 2,300, or approximately one-third less than the original amount required.

3. At the end of the reduction in weight, the actual heat output during the hours of sleep, as computed by indirect calorimetry, was approximately one-fourth less than normal, thus giving a rough confirmation of the lowered number of calories found by actual measurement of the food intake. That there was no seasonal variation in metabolism was shown by the constancy in the metabolic level of the control squad.

4. The heat output by indirect calorimetry per kilogram of body weight and per square meter of body surface was essentially 18 per cent. lower than at the beginning of the study.

5. The analyses of food, feces and urine were sufficiently complete to permit a nitrogen balance to be made, and it was found that throughout the period of loss in weight and for some time subsequent thereto, there was a marked loss of nitrogen to the body. In round numbers these men each lost

* Read before the joint meeting of the Section on Pharmacology and Therapeutics and the Section on Pathology and Physiology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

approximately 150 gm. of nitrogen. There is an intimate relationship between this "surplus nitrogen" and the metabolic level. Removing what we may designate as "surplus nitrogen," we believe, distinctly lowers the stimulus to cellular activity.

6. The nitrogen output per day at the maintenance diet of 2,300 net calories was about 9 gm. A control group of twelve men, living substantially the same life and eating in the same dining room, but with unrestricted diet, showed a nitrogen output of from 16 to 17 gm. per day.

7. The pulse rate was astonishingly lowered. Many of the men showed morning pulse rates as low as 33, and daily counts of 32, 31 and 30 were obtained; at least one subject gave six definite counts on one morning of 29.

8. The blood pressure, both systolic and diastolic, was distinctly lowered.

9. The skin temperature, as measured on the surface of the hands and forehead, was, with some subjects, considerably lower than normal. With most of the men, normal temperatures prevailed.

10. The rectal temperature was practically normal.

The general picture that the men presented at the end of the test, or at their minimum weight, was one of noticeable emaciation, particularly in the face; but all the men continued the usual college activities with no obvious reduction in stamina.

Two of the men had chronic nasal disorders. One was operated on during the test and the other should have been. Aside from these two, the prevalence of colds during the period was about the same as with the other college students. During the study three men underwent ether narcosis for operations (on nose, foot and for hemorrhoids) and made rapid recoveries. One man at the lowest period of weight became infected with typhoid, ran through a course of very high fever, and was critically ill for some time; he has made a complete convalescence and recovery and has returned to college.

The most noticeable discomfort experienced by the subjects was a feeling of cold, which it is only fair to say might be due in large part to the severity of the past winter. In general, notwithstanding the very great reduction in the metabolism (which we believe was due to the removal from the body of the stimulus to cellular activity of approximately 200 gm. of "surplus nitrogen"), the whole period of lowered food intake had no untoward effect on the physical or mental activities of these men, and they were able to continue successfully their college duties.

The control squad, having demonstrated the absence of a seasonal variation in metabolism for about three months, was put for a period of three weeks on a restricted ration of less than one-half the previous calory consumption. In all details the picture exhibited by the first squad was strikingly duplicated by the second squad, although, as the loss in weight was obviously not so great (6 per cent. as compared with 12 per cent.), the phenomena were quantitatively somewhat less emphasized.

The alveolar carbon dioxid tension of every subject remained constantly normal.

As a result of numerous tests of the neuromuscular processes, Dr. Walter R. Miles found that there was no material change as a result of the reduced diet. There was a very slight falling off in the strength tests with the hand dynamometer.

The observations of Dr. H. Monmouth Smith on muscular efficiency in horizontal walking on the treadmill showed a decreasing energy requirement from 0.61 gm. calory to 0.52 gm. calory per horizontal kilogram meter, after four months' reduction of the diet to about two thirds of the normal. This amounts to an increase in efficiency of approximately 14 per cent. over and above the economy of energy requirement due merely to the reduction in body weight. In fact, the total gain in economy amounted to 14 per cent. for Diet Squad 2 after twenty days of reduced diet, and to 22 per cent. for Diet Squad 1, at the end of the four months of reduced food allowance.

APPLICATION OF THE FINDINGS

Whatever bearing the facts revealed in this research may have on the economies of life in time of peace, no hesitancy should stand in the way of adopting for civilians, in times of need like the present, war measures of food conservation that would result in enormous gains without endangering the efficiency of the civilian population. It is to be clearly understood, however, that the diet of the growing child should never be voluntarily reduced.

The reduction of diet can safely include all food principles, proteins, as well as carbohydrates and fats. Chittenden's low protein diet is shown by these experiments to be fully practicable, a fact of no little importance, as it relates to the most expensive source of food material.

Many would be benefited by dropping occasionally or regularly one meal per day. No matter what measure of reduction is adopted, the total calorific value of the daily ration could ordinarily be cut down one third or even one half, for a considerable length of time. The frequent use of the scales will be the indubitable proof of one's actual cooperation in this method of food conservation.

We have found the use of bran and the liberal serving of coarse green or cooked vegetables of considerable value, not only in minimizing the cravings of an unsatisfied appetite, but also in avoiding constipation due to lack of bulk in the diet. Indeed, it was evident with our subjects that hunger was appeased, temporarily at least, just as effectively by a bulky meal of low calorific value as by a less bulky one of greater calorific value. The free use of fresh fruits also will prove to be of inestimable value. Even water drinking, before and during the meal, when not contraindicated, will serve as an effective means of taking off at least the keen edge of the appetite.

Eating between meals is a very important source of food waste, which, with the average student, amounts to at least 10 per cent. of the daily intake of food. Enormous curtailment in the indulgence in candy and food luxuries is today the plain duty of every patriot. The weekly "candy day" should be adopted by all, even children, unless the use of candy is entirely abandoned, as could be done to advantage. The use of water alone to relieve thirst should replace the use of other drinks, especially those containing sugar.

However, it must be recognized that those in occupations entailing considerable physical exertion will of necessity require a proportionately greater consumption of food material, especially of starches.

CONCLUSION

The assurance of the safety of the adoption of even a considerable curtailment in the daily food allowance of the adult population will prove to be of no small incentive to an enthusiastic response as a patriotic service, and to this end the physician should stand ready to pledge unbounded cooperation.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MCCOLLUM, HESS, GOLDBERGER, WHEELER AND SYDENSTRICKER, MURLIN AND ROTH

Col. Victor C. Vaughan, Ann Arbor, Mich.: Concerning Dr. Goldberger's paper, permit me to say that last fall Surgeon-General Blue of the Public Health Service asked Dr. William H. Welch of Johns Hopkins University and me to go over Dr. Goldberger's work, both theoretically and practically, and make a report to the Surgeon-General concerning it. We went to Spartanburg, S. C., and there studied the statistical work done by Dr. Goldberger and his assistants. At that place we also visited the hospital which is maintained by the Public Health Service for those who have pellagra. In the neighborhood of Spartanburg we visited a large number of cotton mills, in which the observations recorded by Dr. Goldberger had been made. Subsequently, we proceeded to Milledgeville, Ga., and visited the insane asylum in which Dr. Goldberger has been carrying on his observations and experiments for more than two years. This is a large asylum, housing about 4,000 patients. Two years ago and more Dr. Goldberger took charge of one colored and one white ward in this asylum. Cases of pellagra were in all the wards. Dr. Goldberger changed only the diet; in addition to the ordinary food furnished the inmates, he supplied additional animal food. Pellagra has wholly disappeared from the wards under Dr. Goldberger's care, and has persisted in all other wards. When the experiment was begun, these two wards contained a large number of pellagrins, all of whom have recovered, and in none of whom has there been seasonal reappearance of the disease. From time to time patients have been added to these wards, and within a few weeks have recovered completely, so far as pellagra is concerned; while in all other wards the disease has persisted. Here we have two wards in a large asylum with the inmates of all wards living under exactly the same conditions with the exception of diet. In the two wards placed on a liberal diet, pellagra has disappeared, while in all other wards it has persisted. This is one of the most striking and successful experiments that I have ever seen, or, so far as I know, has ever been recorded.

After a careful study of all the publications on pellagra, those of Dr. Goldberger and his assistants and those of his opponents, and after a thorough study on the ground, Dr. Welch and I have been thoroughly convinced that Dr. Goldberger and his assistants are right in their claim that pellagra is a disease of malnutrition. He does not claim to have discovered, as yet, the exact food constituents, the presence of which or the absence of which contribute to the development of this disease, but he has demonstrated that it may be caused by a diet poor in proteins; that when it exists it disappears under a liberal diet, and that pellagra may be wholly eradicated by proper feeding. Dr. Goldberger properly insists that it is not enough in an experiment of this kind to show that individuals are supplied with proper food; it must be demonstrated that they eat it. Supplying a family with proper food does not mean that every individual in that family eats the proper kind of food. During the past few months, in some of the Southern camps it has been found difficult to induce certain men, especially those from the rural districts, to eat the liberal, varied and scientific diet furnished in the soldiers' rations. These young men have always eaten corn bread, side meat and syrup, and if they can get these things, they will eat nothing else. Appetite is not always a safe guide; it depends more on habit than physiologic fitness.

Dr. Eugene Lyman Fisk, New York: I would like to have Dr. McCollum say something about the relationship between complete fasting experiments and the so-called deficiency diseases. In the complete withdrawal of food every possible food element is absent, and yet in such experiments these characteristic changes do not develop.

Dr. Charles W. Greene, Harriman, Tenn.: We have certain comparative results produced by certain experimentations on this problem, and I would like to state the case: We have fishes that migrate from the sea into the fresh waters for spawning purposes. This is one of that group which we know in general terms as the king salmon, which takes from three to five months in making its migration, running from the ocean through the Golden Gate into the head waters of the Sacramento. Extensive changes take place in these fishes, the details of which do not necessarily fall in this discussion, but resulting, roughly speaking, in very marked changes in the proportionate composition of the constituents of the protoplasm; yet these animals give off energy very active and very aggressive in their physical manifestations of energy, up until perhaps the last few days before they die; and even that takes place almost immediately after the spawning. I have seen mixed specimens collected for practical spawning purposes that showed an extreme vitality and vigor just at the time of the collection. Those are held in spawning pens, so called, and in two or three days these same specimens will have died. That often is the culmination of changes taking place in the composition of the fish; but so far as I can see, it is rather a difficult problem to assume that these changes are necessarily traceable to deficiencies in the diet that they took some five months before. If it is possible to leave in the problem in relation to the feeding experiments of such animals as the king salmon, I would like to have an expression of opinion from a man so skilful in interpreting detailed data as Dr. McCollum.

Dr. E. V. McCollum, Baltimore: In experimental polyneuritis a characteristic change is a degeneration of the motor cells. I have submitted a number of animals with experimental xerophthalmia to pathologists, and they assured me they could find nothing wrong with them other than changes affecting the eye structures.

Dr. Goldberger's observation that pellagra does not occur among those who use milk liberally, coupled with the observation that many patients recover during the summer when string beans, turnips, tops of greens and other leafy vegetables find a prominent place in the diet, correlates in every way with our observations on experimental animals. The string bean would seem to be analagous to the leaf in its dietary problem. In other words, while the pod is functionally active, it has the dietary properties of the leaf. The seed of the bean is quite a different thing, from the dietary standpoint.

Dr. H. Gideon Wells, Chicago: During the past year I had opportunity to observe one of the largest mass experiments on human deficiency disease of recent times. It will always be a source of regret to me that I was not able to give this opportunity the study it deserved, but I was assigned to work on a more acute problem, that of typhus fever. I was in Roumania last summer and autumn for a brief period; and, as you all know, Roumania has suffered from starvation during this war as almost no other country has. So severe has been starvation that even during the harvest months of September and October people were dying of starvation in great numbers. Under these conditions, deficiency diseases were particularly to be seen and observed, and the conditions were peculiarly good for studying them, because we had an opportunity to contrast two sets of people, differing not at all in geographical situation or in opportunities for caring for themselves, but who differed in their habits of diet—that is, the Russians and the Roumanians. The deficiency diseases among these two sets of people were quite different, and their dietary habits were different. As you went down the Russian and Roumanian fronts, and saw where pellagra occurred and where it did not occur, the thing that stood out, in a way that you could not get away from, was that where there was pellagra the chief article of diet was always yellow corn; and where you have corn you have pellagra. There was starvation and scurvy among the Russians, but the Russian's fundamental dietary article was black rye bread and beans.

Before the war pellagra was common in Roumania. I was told that there were from 60,000 to 80,000 cases before the war. Pellagra occurred only in the districts of Roumania where this limited diet was prevalent. It occurs in direct proportion to the extent that the people cannot supplement "mamaliga," or corn meal mush diet, with other foods.

Last summer, after having been in the war about a year, the Roumanians were beginning to observe just what the Austrians on the other side of the line observed after they had been in the war for a year; and that was a form of edema which, at first, they thought was an acute nephritis, with

dropsy, face, feet and hands swollen, but with no renal changes. This disease is described in Germany as the "Kriegsoedem," or war dropsy. This was beginning to appear in Roumania among the people who had been most seriously deprived of food. You will notice in the usual dietary of the Roumanians an evident deficiency in fats. They cannot afford to eat the butter that they make, and while they use the cows and oxen for transportation purposes, they do not seem to get very much milk from them. We found, as far as we had time to observe it, that when these patients were given butter fats they were likely to get better. But, of course, when under treatment they always got milk, soup and other things. Another thing about pellagra that was quite striking was that before the war, in Roumania, as in most countries, pellagra occurred chiefly in adults, presumably because it takes a great many years of dietary deficiency of ordinary degree to produce it; but in those districts of Roumania in which the war had reduced the diet almost solely to corn meal mush, they find a very acute form of pellagra in children 5 or 6 years of age. So the thing that stood out all the time in our observation was: yellow corn and pellagra.

DR. E. V. MCCOLLUM, Baltimore: I neglected to reply to the question that Dr. Hess asked in regard to whether we made any histologic examination of our animals suffering from experimental scurvy. No such observations were made by us. We took as criteria of scurvy the swollen and hemorrhagic condition of the joints. We assumed that the disease was scurvy in the light of the observations of Drs. Jackson and Moore, who made such histologic examinations of guinea-pigs which were brought to a state of scurvy by the same procedure. In all cases we induced scurvy in our animals by feeding a diet of oats and milk. In all the work we have done with rats, heating foods for an hour to an hour and a half at 15 pounds pressure apparently does not cause marked deterioration in the quality of the foods.

DR. RALPH G. MILLS, Seoul, Korea: The experience of which I wish to speak is one involving several million people and extending over about 4,000 years. In other words, it affects the Korean people, among whom I have been working for the last ten years. These are all more or less short of food, and yet they do not have pellagra or rickets or scurvy. However, I do find a little beriberi; and that is, so far as we have been able to tell, of more recent origin, being found only among the young Koreans, the more wealthy people, who are able to afford the Japanese rice, which, as compared with the Korean rice, is more highly polished and higher in price. Being whiter in appearance, it attracts them. The physical deficiency of the Korean people is only to a slight extent manifest. That is, the race, as a whole, is slight and rather tall. We see very few fleshy people among them. The chief difficulty is that there is a certain amount of mental sluggishness, not widespread—I mean not intensely bad when you compare it with the mental tests comparable to those used in our own schools. The Korean child is two or three years behind the average American child of the same age. Just what the cause of this is, is hard to say. These same children are more susceptible to tuberculosis under the same conditions that would prevail in schools in this country; and, therefore, there are these two and other reasons which make us feel that there is something radically wrong with the Korean diet.

Investigation in this has just been begun. One of the first things found was the excessive use of rice. Rice, in itself, contains a great deal of nutriment, and the actual amount that the Korean gets daily is sufficient for his nourishment, if he could use it all; but apparently he gets so much that the actual bulk of it interferes with his digestion. Intestinal disturbances are common. Living on a very small amount of meat, with a lot of dried fish, you would expect to find but little intestinal trouble, and almost complete absence of indicanuria. The metabolism of the people is at a low ebb. The creatinin figure is not over half of what it is for America. On the other hand, the resistance has been increased toward certain infections. Ordinary infections do not seem to take hold of them as much as we would expect to find under the circumstances; but there is an increased susceptibility to diphtheria; so that, while in certain phases of their life we get deficiency, possibly it is made up in other ways, and it may have balanced it.

DR. WILLIAM MOORE, St. Paul: I spent three and one-half years in South Africa. The chief diet of the natives of Africa is corn meal, usually white corn meal, not yellow corn. The ordinary Kaffir boy in service, or at work, usually receives corn meal as his main diet. I do not remember that I ever saw a Kaffir boy drinking milk; it is not served as a portion of his diet. He may receive about 5 or 6 cents' worth of meat once or twice a week. I think the rickshaw boys in Durbin are required to have meat twice a week. It is what they call "boy's" meat; it keeps them in good healthy condition. They eat very little vegetables. Oftentimes they will dig up meat that has been buried. They may bring up the question of their having a sufficient amount of meat, but it is oftentimes decomposed meat; but their primary diet is corn meal, and I have never heard of a case of pellagra out there.

DR. ARTHUR D. HIRSCHFELDER, Minneapolis: I would like to ask the speaker whether there is any relation between the inorganic salts of these different diets, especially as to sodium, potassium and calcium, and possibly magnesium, in the diet? Certainly in some cases of angioneurotic edema the disturbance may be associated with excess of sodium as compared with potassium, and, as Wright found, these cases sometimes subside under calcium. It seems to me possible that some of these specific variations in diets, in deficiency diets, might be associated with variations in the mineral content rather than in the organic constituents. I would like to ask whether there is any evidence on the subject?

DR. ALFRED F. HESS, New York: In relation to what has just been said as regards scurvy, it was for a long time thought that potassium had a direct relation to scurvy, particularly as all the fresh vegetables and fruits are rich in potassium; but it was shown that by adding inorganic potassium to the diet scurvy could not be prevented or cured. It was then thought that it had to be in organic form. But it was shown that the antiscorbutic property of the various vegetables and fruits had no direct relationship to their content of potassium. It was thought, then, that calcium had a direct relationship. Orange juice is very rich in calcium, but, on the other hand, some antiscorbutics are not. Diet rich in sodium will not bring on scurvy. This was an idea formerly thought to be the case, in view of the salt diet, the salty meats; but they have been shown to bear no exact relationship.

I asked Dr. McCollum whether he had examined the histology of the bone of the guinea-pig, on account of an experience which I had. I fed some guinea-pigs on the diet which he used, and some of these pigs developed apparent scurvy, with swelling and thickness of the joints. When I examined these histologically, I was most surprised to find a picture resembling rickets with osteoid tissue.

I do not want to interpret Dr. McCollum's results, especially in view of the fact that he has carried out such a large amount of excellent investigations, but I think there must be some way of making our results conform. It is possible that we are dealing with different diseases, as we are using different diets. I have examined the bones of the animals of which I speak, and they show typical scurvy. In regard to such a simple question as constipation a person cannot be mistaken. You cannot prevent the onset of scurvy by giving liquid petrolatum.

When you give these animals dried vegetables, they develop scurvy. If you give them fresh carrots, they are cured of it. Or if you feed animals on oats and hay, they develop scurvy. On oats and grass they will not develop scurvy. The only difference between the hay and the grass is that the grass has been dried in the sun; not at any high temperature.

Finally, I want to say a word again about the dried vegetables. I realize that dried vegetables are of great value, both because they can be utilized throughout the winter, and because they have the same caloric value as the fresh vegetable; but I think we make a great mistake and will get into trouble if we spread the propaganda among the laity that the dried vegetable is the equivalent of the fresh vegetable. I am sure, as the result of the misinformation, that we will have scurvy among individuals and in institutions. If, however, we say that dried vegetables have great food value, and may

be used to half the extent, the other half being fresh vegetables, then I feel sure there will be no danger. This danger is intensified if we are to dry potatoes. In the winter time we depend largely for our our fresh food on potatoes, partially also on carrots and turnips. If we dry not only vegetables in general, but also potatoes, and thus cut off fresh food throughout the winter, I am sure that in the spring we shall have scurvy in civil as well as military quarters.

DR. JOSEPH GOLDBERGER, Washington, D. C.: A number of interesting questions have been raised; one of them the age-old question of the relation of maize to pellagra. Professor Wells' observations of the relation of corn to the prevalence of pellagra in Roumania is, no doubt, correct. This has been repeatedly observed, and it applies also to Northern Italy; but the interesting thing is the interpretation to be put on this observation. We have just had evidence presented that in South Africa they have no pellagra, even though they eat white corn. Clearly corn cannot be an essential factor unless its color is of importance. Progress in clearing up this problem will be more rapid, I think, if we consider it as a question of a faulty diet rather than one of a particular food. No one subsists on corn or rye exclusively; almost invariably there are also other foods. Evidently these other foods may make a corn ration adequate. Again, while a diet too largely of corn is almost certain to be faulty, we do not know that this is also true of rye; or, again, corn supplemented by beans may still be a faulty diet, while rye so supplemented may be entirely adequate. Why the Russians did not have pellagra, though without milk, I do not know. Doubtless, however, their diet, even without milk, was a satisfactory one, so far as pellagra is concerned, at least.

There may be several ways of correcting the pellagra-producing fault. What we have presented this afternoon has simply emphasized the fact that so far as regards the diet associated with pellagra in this country, the addition of the group of foods represented by meat, eggs, and particularly milk, will correct the fault in this diet and prevent pellagra.

With respect to "war edema," I have a rather strong suspicion that cases of that condition occur in this country. I recently saw pellagra in a child in which there was marked edema of the feet. Cases of this sort are, I suspect, passed over as nephritis.

In this country pellagra is a very common occurrence in children of over 1½ or 2 years. The deprivation period, no doubt, varies, among other things, with the degree of deprivation; it may possibly be a matter of years, or it may not exceed four or five months.

DR. R. G. HOSKINS, Chicago: This, perhaps, should be mentioned in regard to Dr. Murlin's figures: In some of the inspections that have been made lately, there is some indication of the mess sergeants inherently meeting the situation by cutting down on the high caloric foods, etc. In regard to Dr. Hess' comments on desiccated vegetables, etc., and with reference to the experiments made on guinea-pigs, the guinea-pig has never acquired the drink habit.

DR. ALFRED F. HESS, New York: About the vegetables which we used, I may add that they were not given in the dry state. Guinea-pigs will not take dry vegetables. They were of three different kinds; from a well-known laboratory in this city; bought in the open market, which you may call commercial dehydrated vegetables; and a third lot dehydrated last summer, in an amateur way. The first lot were 2 weeks old; the commercial variety of indefinite age, and the third lot 6 or 7 months old. They were not given in the dry state, but as much water was added as could be absorbed. In two instances, where I had the opportunity, I gave dehydrated vegetables to infants suffering from scurvy. They were carrots of the very best kind, excellently flavored, and of good appearance. They did absolutely no good. I followed them by fresh vegetables, with a prompt amelioration of the symptoms.

DR. PAUL ROTH, Battle Creek, Mich.: We may assume that two or three months was not sufficient to determine what might happen on a prolonged dictation of diet. That is true. We made it four months, and then we admit the fact that we do not know what might happen in the course of two years, or centuries even, about this civilian war ration; but that we know, at least, what happened in that length of time, possibly.

THE RELATIVE VALUES OF THE PRINCIPLES OF EXTENSION, SUSPENSION AND MOBILITY

EXEMPLIFIED IN BOTH CIVIL AND WAR PRACTICE BY THE HODGEN WIRE CRADLE EXTENSION SUSPENSION SPLINT *

FRANK G. NIFONG, M.D.
COLUMBIA, MO.

Until recently, no very material advancement had been made in the methods of treating fractures of the long bones. It seems to be a subject to which little surgical thought has been given; the practice has been largely empiric. In this field, as distinct from other surgical fields, no very marked improvements have been made. Without particular reasoning, the law of precedent and custom has been followed religiously. Judgments from damage suits have, in this way, quite possibly been avoided to some extent; but the real occasion for them has not been disposed of, for we have often been far from doing as well by the patient as we might. Our texts have handed down the methods of the fathers, without a clear appreciation of the basic principles involved in the treatment. Only one

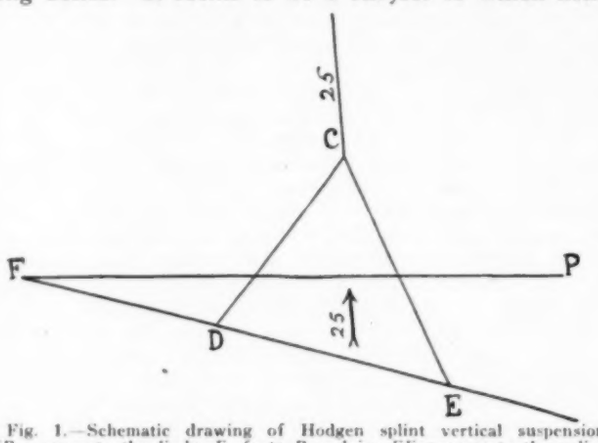


Fig. 1.—Schematic drawing of Hodgen splint vertical suspension. *FP* represents the limb; *F*, foot; *P*, pelvis; *EE* represents the splint; *C*, suspending cord, suspending vertically; *CD* and *CE*, cords suspending the splint. The vertical lift is 25 pounds, distributed evenly along the limb. This is the suspension force. There is no extension.

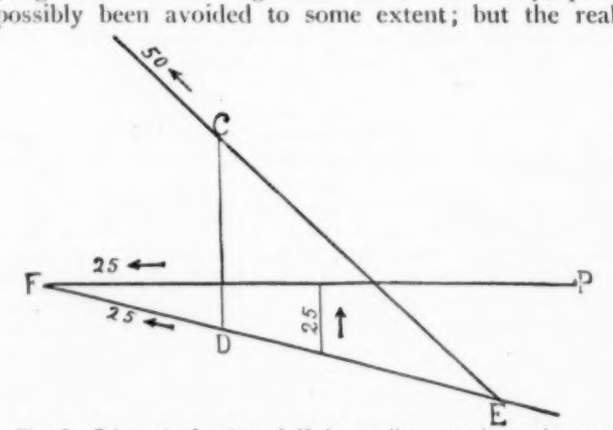


Fig. 2.—Schematic drawing of Hodgen splint extension and suspension. *FP* represents the limb; *F*, foot; *P*, pelvis; *FE* represents the splint; *C*, the suspending and extending cord; *CD* and *CE*, cords suspending the splint. A pull of 50 pounds at *C* still makes a suspension of 25 pounds and an extension at *F*, the foot, transmitted to the limb of 25 pounds. *FP* is the resultant force.

* Read before the Section on Surgery, General and Abdominal, at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

clear idea is maintained throughout all texts, and that is the idea of fixation or immobility of the site of the fracture. To attain this idea, other principles of equal or of greater importance have often been sacrificed. To secure complete fixation and immobility, skin, muscle, nerve and vessel, as well as the patient as a whole, have frequently been overlooked, ignored or forgotten. Cumbersome appliances have been used that may well merit the name of instruments of torture.

More recently, however, the subject of fractures has had thoughtful attention, and great advancement in treatment methods is shown both in the operative procedures and in the external appliances now being used in war work.

When considering the proper appliances for treating fractures, it is well to note the several principles involved in the more rational kind of fracture

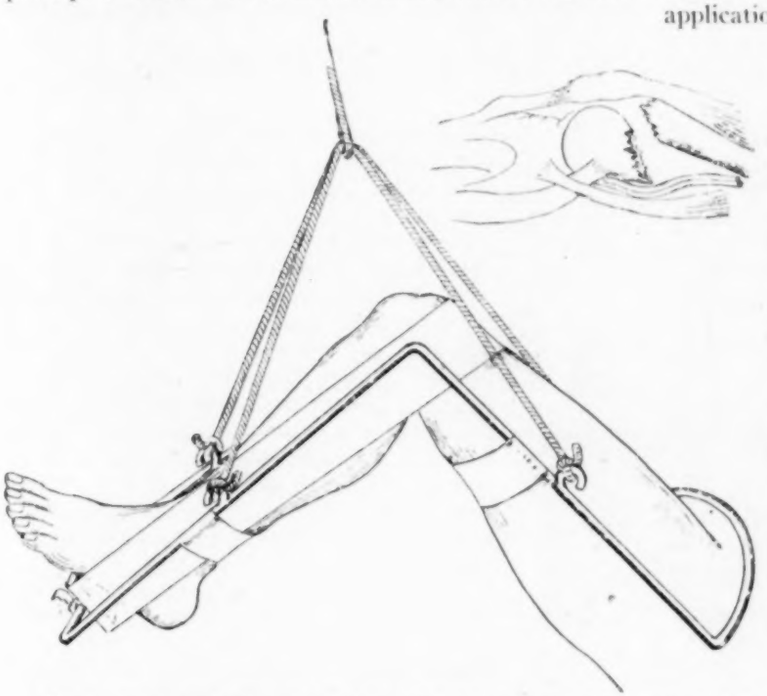


Fig. 3.—Proper application of a Hodgen splint for a supracondylar fracture of the femur. The splint is bent at an angle of 45 degrees. The adhesive straps of the Buck extension overlap above the knee. This position relaxes the muscles of the calf, pulls down the extension muscles of the thigh, and lets the ends appose. See inset above.

treatment. More definitely, we may say that it is necessary to apply these several principles to the femur, since the femur is the strongest long bone, with the heaviest musculature. These principles are just as applicable to the humerus and other bones of the extremities, except that the application of them is modified by slightly different anatomic conditions and certain differences in function.

First, then, is the well-known principle of fixation. The value of fixation is, of course, unquestioned, for the site of fracture must, of necessity, be immobilized. But just because fixation is so absolutely essential, its value has often overshadowed other principles equally important for complete functional recovery. In fractures of the long bones, the femur particularly, the principle of extension is of no less importance than is immobilizing the site of fracture. In the femur, a long, heavy bone that usually fractures obliquely, with powerful muscles to shorten and displace the ends, a fracture will produce deplorable deformity and loss of function as an end-result, no matter how immobile the seat of fracture may be. Extension, therefore,

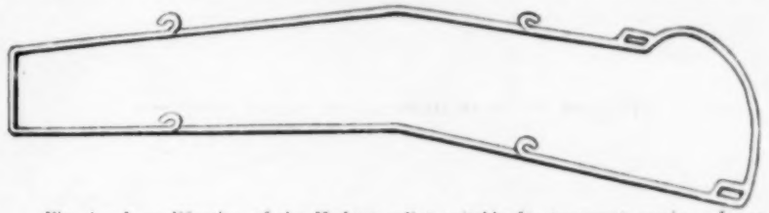


Fig. 4.—A modification of the Hodgen splint suitable for transport service. Inner arm is 40 inches long; outer arm is 46 inches long; lower end is 6 inches wide; upper end is 12 inches wide; openings at the upper end for a strap or padded cord.

is of prime importance, and for fractured femurs is more essential than for any other long bone. The application of extension by Buck's plaster, by Steinman's transfixion pin, or by whatever method used, is really made through the great fascia lata. The stretching of this fascia attached to the hip and knee, with intermuscular septums attached to the bone shaft, makes all soft parts, and the bone also, return to their proper positions. In the judgment of the British Fracture Committee, good form is almost synonymous with good function; and no other principle of treatment produces good form so well as the application of extension.

Extension, of course, implies counter-extension. Intelligent extension is made always with reference to the muscle pulls of the several groups which may not only produce longitudinal shortening but displacement outward, forward, inward or backward. A knowledge of mechanics, muscle attachments and roentgen-ray examinations are all very helpful in guiding the direction of extension and counterextension forces.

Suspension and mobility are important factors in fracture of the femur. The mobility of the patient, especially the aged, is a principle of treatment that must be considered seriously. Moving about in bed, sitting up, and having the comfort and nursing care made easy, make chances for recovery much greater. This mobility is obtained in suspended splints, because the ball and socket hip joint, with its

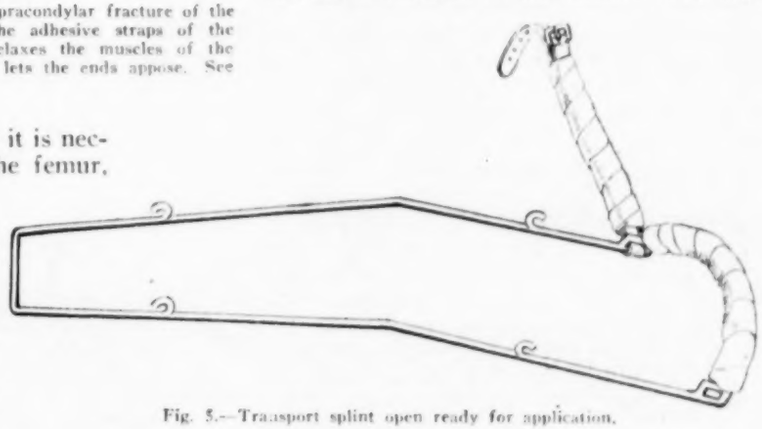


Fig. 5.—Transport splint open ready for application.

wide radius of motion, allows a great latitude of movement of both the limb and the patient, without any danger of moving the fracture site, if the proper extension and immobilizing splint is applied. The principle of suspension is of great value when treating compound fractures and war wounds. It makes for easy examination and dressings, and facilitates roentgen-ray examinations and irrigations of the wounds, all of which are of cardinal importance. The suspension makes possible also the free movement of both the leg and the patient, thereby contributing to his comfort and to ultimate good functioning.

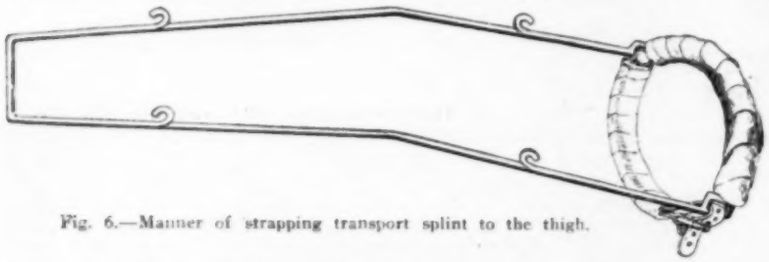


Fig. 6.—Manner of strapping transport splint to the thigh.

Another important principle of treatment which is frequently forgotten or ignored is that of flexion of the limb in a position of physiologic rest. The position that is most restful is slight flexion. Hyperflexion and hyperextension produce muscle strain and much pain, with later results of a paralyzed muscle.

Too often a splint is applied with the hamstring muscle stretched and painful. Stretch the hamstring muscle by hyperextension, and observe how quickly it becomes painful. We are born flexed, and uniformly assume flexed positions when at rest. It is a great mistake to ignore this fact when using splints.

In fractures of the femur there is more or less damage done to the soft parts; and in war particularly the wounds are of the first importance. Any appliance that ignores the treatment and care of muscle and soft parts is faulty; and when fractures are compound and infected, such appliances are impossible. Massage and care of the skin and circulation are very important, even in simple fractures. An appliance that permits open treatment of a compound fracture is, of course, absolutely essential. The wire cradle, open type of splint has so far met this requirement most successfully.

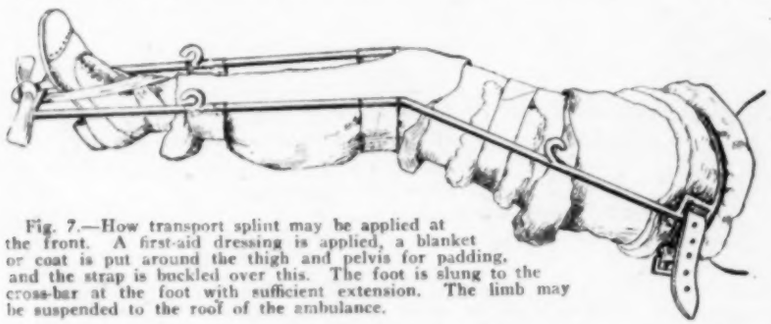


Fig. 7.—How transport splint may be applied at the front. A first-aid dressing is applied, a blanket or coat is put around the thigh and pelvis for padding, and the strap is buckled over this. The foot is slung to the cross-bar at the foot with sufficient extension. The limb may be suspended to the roof of the ambulance.

These several principles mentioned are of relatively varying importance, it will be realized, according as to whether the patient is old or young, the fracture simple or compound, and according to other varying conditions. Fixation and extension should always be secured if possible, and flexion should not be ignored. Open treatment, suspension and mobility are of such importance in many cases as to be absolutely essential. In the aged, in compound fractures, and in war wounds, these principles applied are of inestimable value.

Now, manifestly that appliance is the most valuable and efficient which incorporates the most of these several more or less essential principles of treatment.

In reviewing the several splints and appliances used for treating fractured femurs, one will see that, in proportion to the efficiency of the treatment, one or more of these principles of treatment have been fulfilled. Often only fixation has been used with coaptation splints of board or plaster; plaster of Paris with extension at the time of "setting"; coaptation splints with extension applied, such as Buck's extension; also the old Liston side splint with perineal counterextension; Hamilton's side splint, with weight and pulley extension; Nathan R. Smith's wire splint for suspension, and the wire cradle types of splint, with separate suspension and extension. After study, one will invariably conclude that the wire cradle type of splint embodies more of the essential principles of treatment than any other type. We shall readily see that it can be made to meet the indications of treatment of almost any condition. We shall see that this type is peculiarly a war splint, as is proved by its extensive use at present. The Thomas splint appears to be the most popular one in use just now.

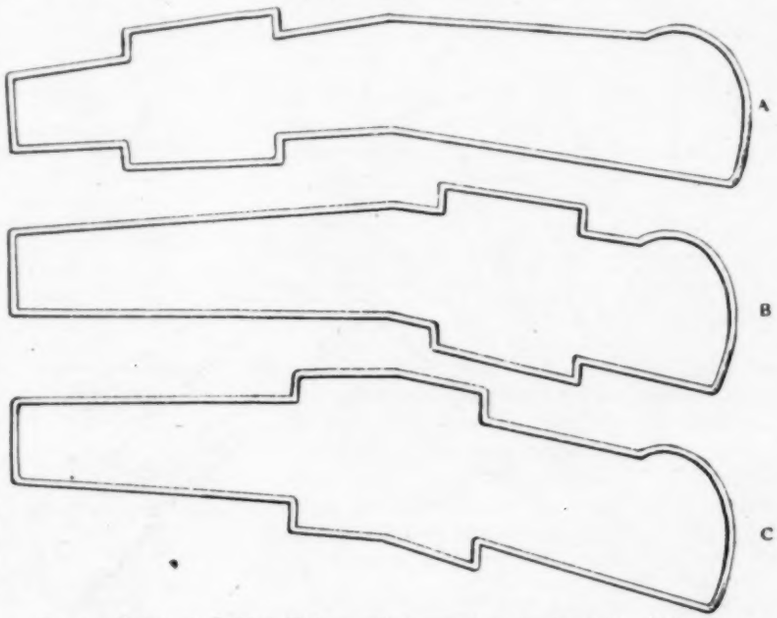


Fig. 8.—Model of modified Hodgen splints spread at the leg (*A*), thigh (*B*), or knee (*C*) to make more room for dressing compound fractures.

It was the genius of a great surgeon of the west, John T. Hodgen, which during our Civil War produced the splint that bears his name. Now that the several most essential principles of fracture treatment are beginning to be recognized, may we not hope that this splint, which compasses all these principles, will

come to perform its true and legitimate function? It is a most perfect wire cradle type of splint, and is, therefore, peculiarly applicable for war service. Ex-

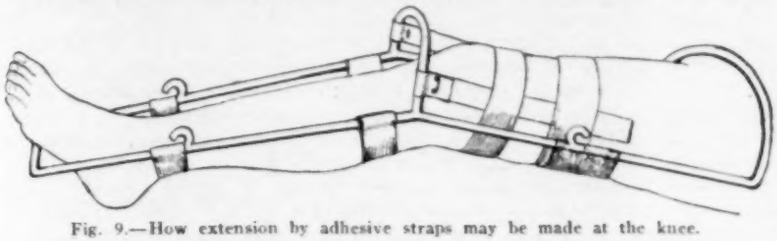


Fig. 9.—How extension by adhesive straps may be made at the knee.

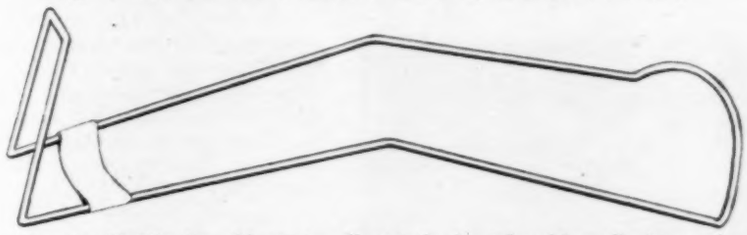


Fig. 10.—Modification with greater offset at the front for either adhesive or clamp extension from the knee. This splint should be of somewhat heavier iron than is necessary without the offset.

tension and counterextension, applied in any requisite amount and with the simplest elementary forces, are secured better than with any other splint yet devised. The inclination of the suspending cord will give any desired amount of extension. Counterextension is secured by gravity, simply by raising the foot of the bed a sufficient amount. Perineal and ischial pressure is avoided. Intra-extension is obtained, which is better than separate pulley and extension, as it leaves the mobility of the patient complete. The factors of mobility, suspension and physiologic flexion are all secured most perfectly. Nearly all modifications of the Hodgen splint have marred, rather than bettered it; but it may be modified in many ways to meet the varying indications for treatment. Such modifications do not deserve separate names, for they are all, in principle, the Hodgen splint. Any degree of flexion at the knee may be secured. The frame may be widened at any place to give more room for treating wounds. Suspension without extension or suspension with any degree of extension may be mea-

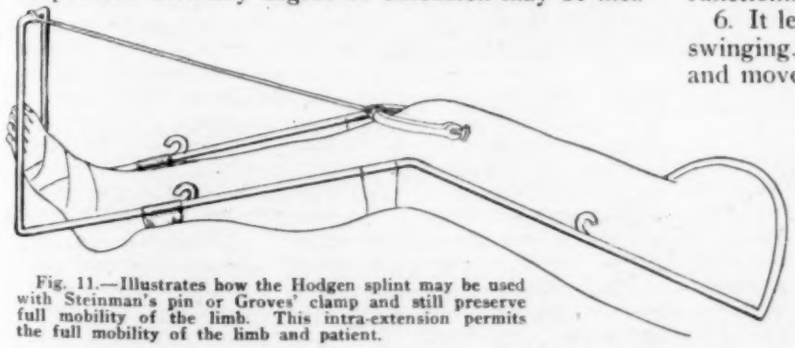


Fig. 11.—Illustrates how the Hodgen splint may be used with Steinman's pin or Groves' clamp and still preserve full mobility of the limb. This intra-extension permits the full mobility of the limb and patient.

sured by the inclination of the suspending cord. Intra-extension within the splint from the knee may be secured by a Buck's extension or a Steinman's pin, still preserving all the free mobility from the hip. For a transport splint, it may be easily modified by using a padded strap threaded through slots prepared at the upper end of the splint, with the spreading arch to complete the circle around the hip. Extension may be made as usual to the cross bar at the bottom of the splint by a clove hitch to the foot or by a Buck's plaster extension. The splint may be suspended to the roof of the ambulance and will add much comfort in transport.

DISTINCTIVE VALUES OF THE HODGEN SPLINT

1. It immobilizes the site of the fracture most satisfactorily.
2. It gives any requisite degree of extension, with gravity counterextension. Extension is easily measured and controlled. Counterextension is not painful or injurious to the perineum and soft parts.
3. Abduction and adduction, with all the varying positions needed to secure bone apposition, are readily maintained.
4. Extension is within the splint (intra-extension), leaving the entire limb and apparatus mobile and free.

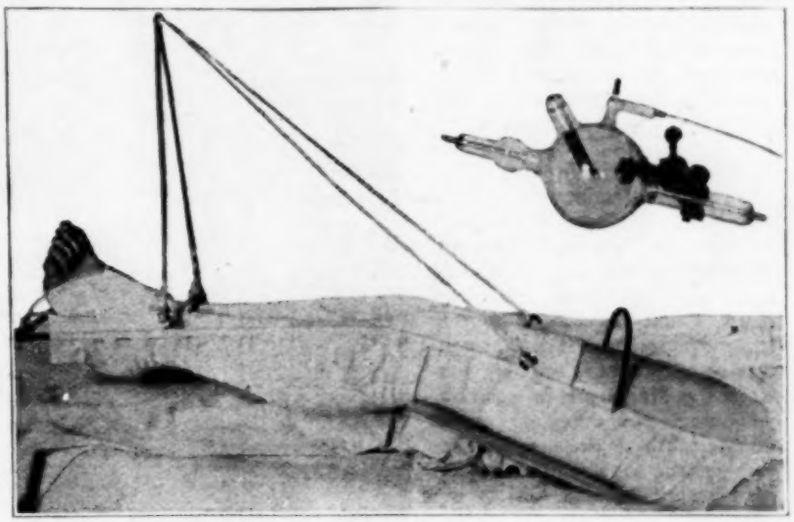


Fig. 12.—Roentgen-ray tube and plate. The ease with which roentgen-ray examinations are made is obvious.

5. Physiologic flexion is secured, thereby preventing hyperextension and muscle strain, with consequent bad functioning, and perhaps a paralysis.
6. It leaves the patient freely mobile, with the thigh swinging. It makes it possible for the patient to sit up and move about in bed, and therefore promotes comfort and good recovery.
7. An open wire cradle splint allows massage, inspection and the good care of the soft parts, which are great factors in getting functional recovery.
8. It is a splint easily modified to meet the indications for treatment of any fracture from the pelvis to the foot.
9. A modification is devised for transport service which is not yet excelled.

ABSTRACT OF DISCUSSION

DR. H. D. WOOD, Fayetteville, Ark.: One of the difficulties I had in making the Hodgen splint was in getting material to suspend the limb. At last I came to use a bath towel. This open weave material does not stretch. It makes the best suspension for the limb that I have found. Years ago I brought

out a splint for the treatment of the humerus. These splints can be used for any sort of case, and they will enable you to do the best work on compound fractures. They have been called orthopedic straight side apparatus. It is time to give the splint another and better name, say orthomelic appliances, straight limb appliances. The patients can be transported easier with these appliances on them than any other way.

DR. DANIEL N. EISENDRATH, Chicago: We must distinguish between the treatment of fractures in civil practice and in war practice. In civil practice the skin is usually intact; in war extensive destruction of the skin and soft parts and frequently comminuted fracture occurs. I am speaking especially of fractures of the femur. Nine men out of ten who are treating fractures in civil practice are treating them with the old method of Hamilton, long external splint with Buck's extension, or Buck's extension with plaster cast. It is folly to put on a plaster cast with extension. The majority of men are treating fractures of the femur in the horizontal position, perhaps elevating the foot of the bed to attain supposed counterextension. The Hodgen splint teaches us that you can put the fracture fragments into line. You do not get them into line if they are in the horizontal position on account of the pull of the muscles. The only modification of the inclined plane is in the lower third of the femur, where it is criminal to apply the old method of horizontal extension or even ordinary oblique extension, because the pull of the gastrocnemius and soleus pulls the lower fragment back so that you cannot get apposition. If you want the fragments in position you must put them up on a double inclined plane, otherwise you get the very serious sequel of pressure on the vessels or union in a bad position. I have never had quite the faith in the Hodgen splint, so far as extension is concerned. In my opinion no splint can make extension directly on the point of fracture. I believe you must make extension on the muscles and tissues around the seat of fracture. The roentgen ray has taught us that we must make extension on the envelop of tissues around the fracture. That contracts immediately, beginning after the fracture, and the contracture pulls the fragments apart. Unless you can keep up extension and pull long enough to tire the muscles and counteract the soft part contraction, the fragments are bound to slide past each other. In war we are obliged to adopt another principle, namely, extension on the long end of the femur. Here the Steinmann pin, the Besley bone peg, have served usefully because we cannot apply the Buck's extension. The majority of men in putting on the Buck's extension forget the comfort of the patient. They do not face the inside of the Buck's extension with something that will not come into contact with the ankle. And the majority of surgeons do not put the adhesive plaster on in such a way as to make direct extension on the soft tissues around the fracture. If you want to put it on properly you must put it on as high as the upper third of the thigh.

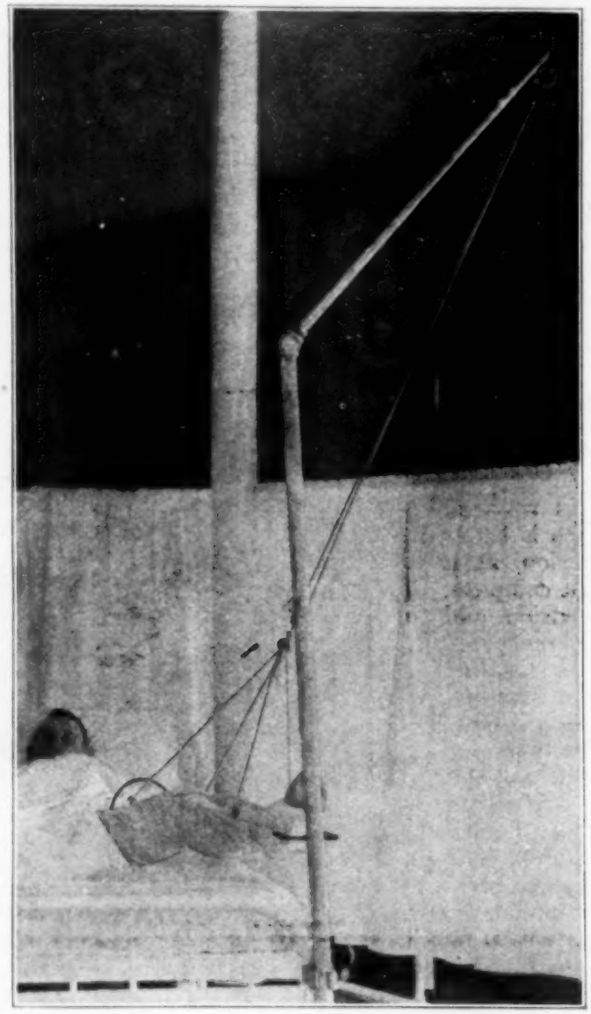


Fig. 13.—Use of the bed standard for suspension, extension and abduction. The abduction is made by the length of the inclining arm.

DR. F. L. REDER, St. Louis: The chapter on fractures of the femur will require the consideration of men in the practice of surgery for all time to come, because of the manifold diversity in exercising common sense in the treatment of these conditions. Has it occurred to you why this is so? If we revert a bit into history, we find that in 1819 Daniell of Savannah, Ga., applied the weight and pulley to obtain permanent extension. It was Vaningen of Schenectady, N. Y., who in 1855 elevated the foot of the bed to obtain counterextension, while to Sargent of Philadelphia is accredited the application of adhesive straps to the leg to obtain adequate support for extension. Dr. Sargent was good enough to say, however, that he derived the idea from Wallace of Philadelphia. These were really the first steps of progress in the successful treatment of fractures of the thigh. They are mentioned to emphasize the value of the little things in connection with the treatment of this fracture. There have been three epochs in the history of the treatment of fractures of the femur. The first started with the earliest periods when fractures were treated and embraced the straight position. The second was instituted by Percival Pott, the distinguished English surgeon, during the eighteenth century, and held sway for nearly 100 years. This treatment was conducted on what Pott called his "physiologic doctrine," consisting in holding the leg in a flexed position, the patient being placed on his side. The doctrine was accepted in Great Britain, in France and on the continent generally. Dupuytren's decision as to the merits of this doctrine was instrumental in popularizing the method in France. Later, modifications began to show themselves, and instead of the patient lying on his side, he was placed on his back. The limb was supported on a double inclined plane. In this country this method of treating fractures of the thigh did not find much favor; the practice of Pott did not become popular. The third epoch, and it is the present epoch, is the one in which the treatment consists in again carrying the limb in the straight position. When Dr. Hodgen contrived his splint he had in mind the one problem, the influence of position on muscle relaxation. He reasoned that extension must be made in manner least likely to excite muscular contraction, i. e., in a direction that will not come in conflict with a position of the limb calculated to favor muscle relaxation. The outcome of this reasoning was the suspension splint so graphically described by the essayist.

DR. C. W. MORE, Eveleth, Minn.: I want to endorse the essayist's recommendation of the Hodgen splint in every particular. I have used the Hodgen splint in over 2,000 fractures of the lower extremities. I have tried to get away from it by using other methods, but have always gone back to the Hodgen. It gives the best results, allows inspection and dressing of the fracture without disturbance, is comfortable for the patient, allows the patient to move about in bed, and adjustment of the bed pan is a simple and easy matter. Its use is limited only by the ability of the surgeon to take advantage of its possibilities; one with knowledge of anatomy

and some mechanical ingenuity will obtain the best results. The Hodgen suspension is as useful in fractures of the long bones below the knee with displacement as with the fractured thigh. The more severe and complicated the fracture, the greater the indications for its use. Not only direct, but lateral and counterlateral extension can be obtained. My experiments gave me about 18 pounds direct extension with 45 pounds at the upper end of the pulley, which is a little less than that of the essayist. However, one can get all the extension necessary. The Hodgen can be made by any blacksmith.

DR. E. M. SANDERS, Nashville, Tenn.: I want to say a word for the old people in regard to this splint. Old people, 70, 75 and 80 years of age, can be treated more comfortably in this appliance than in any other, except the rolling chair. Occasionally nonunion occurs, but I put them back for another month, and usually union takes place in the second month. There are two or three little points to which objection is raised. As brought out in fracture of the lower third or fourth of the femur, deformity can be overcome by extreme flexion. Another objection is the heel pain. The patients complain of this pain more than any other pain in connection with the whole treatment of fracture after the first forty-eight hours. That pain can be relieved by padding the Achilles tendon with a big wad of cotton. Dr. Eisendrath has brought out the point of ankle prominence. We relieve this by a piece of tape. We have not used the Wallace pad or any other kind of complicated pad. We use the ordinary hospital pad.

DR. FRANK G. NIFONG, Columbia, Mo.: The principle of treatment I wish to accent most is extension. The fascia lata is the most important structure to be considered when applying the principle of extension. Extension, whether made through the shaft of the bone by Steinmann's pin or by a Buck's plaster, is, nevertheless, made through the fascia lata and the intermuscular septums attached to the linea aspera. Direct bone extension by pin or caliper would displace the lower fragment forward or backward, as the pull happened to be in front or behind the fulcrum or knee joint, if it were not for the fascia lata and soft parts. It is always the pull through the fascia lata and muscles that reduces the limb to normal contour and position and lets the displaced ends of bone come back into apposition. Extension is the most essential principle to be developed in the Hodgen splint. The Hodgen splint has no friction to deal with, and we can closely approximate the amount of extension pull we are making. We need not measure this accurately in pounds, but we need only to know we are getting length and symmetrical contour. Frequent examinations with fluoroscope, so easily done in a suspended splint, will indicate if we need more or less extension, abduction and the amount of flexion necessary to secure perfect apposition of the bones. We do not have to "set" the bone in the classical way. We do not wish to set the bone. In a very short time it will set itself if extension and suspension are applied properly with a Hodgen splint. It may not be the first, second or even the third day, but it comes back in good time. By this continuous even smooth and not too violent pull, we gradually have muscle relaxation and apposition of the bones with all the soft parts coming back into normal contour. Too much extension puts the muscles in a spastic condition, and will not act as quickly as a lighter weight. Not over 10 or 15 pounds is sufficient, as a rule. Of course, the principles of suspension and open treatment are of great importance in war work. That is the reason for the popularity of the wire cradle type of splint at present.

The Hodgen splint is of exceptional value in treating fractures in the aged. It is with these old people that the principle of mobility counts for so much. Mobilizing them is next to getting them "up and out." To keep the old going and their functions all active is the most important principle in geriatrics. The Hodgen splint is of peculiar value not only in the aged, but in every case, because it permits the consideration of the patient as a whole. It considers his nerves, his vessels, his muscles, his skin and all his functioning organs. It permits the patient to be treated as a psychologic entity, and cares for him as a feeling human being.

Do not forget the importance of the splint being open, allowing for inspection, massage, measurements, etc. We see contour and symmetry of the limb and can compare it with the other at all times. Good contour is almost synonymous with good results. Ninety per cent., at least, are good results, according to the British Fracture Committee.

MUCODERMOID CYST OF THE PERICARDIUM *

JUAN BACIGALUPO, M.D.
BUENOS AIRES, ARGENTINA

Pericardial tumors occur rarely. In 5,700 necropsies made since 1906, we found them only twice. They are all secondary tumors. We have more frequently found tuberculous granulomas in miliary tuberculosis, although it is one of the less frequent localizations. Parasites, hydatidiform cysts, cysticerci, etc., have also been described.

This case is one of congenital cyst of the pericardium, and is the first, I believe, to be described.

Intrathoracic congenital tumors, though rare, have been found. Nandrot,[1] in a review of the literature of dermoid and mucoid cysts of the anterior mediastinum, did not find a single case that can be compared with our case. A case observed by Nandrot was the fifty-seventh case recorded. In none of them did the tumor reach the pericardial cavity, and in only a few cases was the tumor adherent to the parietal layer of the pericardium. In one case a dermoid cyst was firmly adherent to the pericardium, the large blood vessels, and to the trachea. This tumor was the size of a fist.

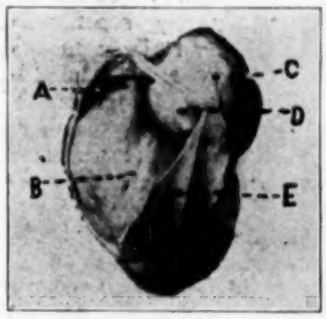


Fig. 1.—The heart: *A*, origin of pulmonary artery; *B*, anterior ventricular wall; *C*, phrenic nerve; *D*, tumor; *E*, parietal pericardium.

Pathology of Tumor.—On removal of the sternum a small elevation of the pericardial region was perceptible. When the pericardium was opened a tumor was observed in the region of the left auricle (Fig. 1 *A*). The phrenic nerve was visible on the anterior surface of the pericardium overlying the tumor.

When the pericardium was opened we found only slight adhesions at the level of the anterior pole of the tumor. After the pericardium was removed we proceeded to study the localization of the tumor and its connection with the heart, endeavoring at the same time to ascertain the modifications of the anatomic configuration of the heart.

The tumor was situated in the place usually occupied by the left auricle, causing a protuberance in front of the large vessels.

When the tumor was removed from its bed, the pulmonary artery (Fig. 2, 1), the left auricle (4), a part of the right auricle, the aorta, the base of the left ventricle, with the corresponding coronary artery were flattened to form the bed of the tumor.

The dissection was not difficult, because there were no adhesions between these structures and the tumor,

* From the Laboratory of Bacteriology and the Anatomo-Pathologic Institute of the Hospital de Niños.

1. Nandrot: Contribution à l'étude des kistes dermoides du médiastin antérieur, these de Paris, 1917.

except at the posterior pole, where the aorta and the pulmonary artery adhered to one another.

The tumor was pear shaped with its larger pole facing forward and its small pole backward. It was free in the pericardial cavity. It had a capacity of 35 c.c., and was of unequal consistency, being soft in some spots and hard in others. It weighed 30 gm.

Fig. 2.—Cavity where tumor was placed; 1, pulmonary artery; 2, aorta; 3, coronary artery dissected; 4, left auricle; 5, small auricle (left); 6, left ventricle.

When the tumor was opened (Fig. 3), it was found that the larger pole was occupied by a single cavity; the remainder of the tumor had a honeycomb structure. The wall of the large cyst was smooth like that of all the teratomas. Numerous trabeculae divided the tumor into a large number of small spaces containing partly solid and partly semifluid material. The solid part consisted of ten small masses like grains of coffee, of different sizes (Fig. 4). They were soft and mushy, breaking up on the slightest pressure. They did not dissolve in acetic acid, or in a mixture of alcohol and ether. The fluid content was mucoid in character, precipitating on the addition of acetic acid but not dissolving in an excess of it.

The Heart.—The ventricles and the right auricle were in their proper position. The left auricle was flattened out and completely hidden between the lower surface of the tumor and the base of the ventricles on one side, and on the other, between the tumor and the perietal pericardium. Its walls were almost in contact.

The pulmonary artery, though very much flattened (Fig. 2), was not obstructed, because water injected into the right ventricle passed through it without any difficulty. The circulatory mechanism was normal anatomically, although slightly disturbed on account of vascular modifications.

Microscopic Anatomy of Tumor. — Microscopic examination of the contents of the tumor disclosed cellular elements, cubical and columnar, some of them ciliated containing roundish bodies (Fig. 4) of the size of a leukocyte and full of granulations. These bodies (Fig. 4) were homogeneous in structure, having no nucleus and no affinity for the usual stains. Hematoxylin stained them uniformly. Some of these masses contained bodies the size of a red blood cell with a center that stained more deeply with hematoxylin.

Sections embedded in paraffin and paraffin-celloidin showed that they were formed by two portions—a cortical layer and an internal epithelial mass.

The cortical layer was formed by a series of concentric layers or lamellae, as is generally observed in these tumors, probably on account of the pressure exerted by the contents.

Embedded in the fibrous tissue, without regular formation, are glandlike structures, some of which seem to be of the sebaceous type (Fig. 5). There are also vessels, though these are few in number. The cellular portion differs according to the places examined.

In some portions we found an epithelium resembling epithelium of the malpighian layer of the skin. In those portions we could not find papillae, which we know are not found in simple dermoid cysts. In other portions we found only endothelium, and in still other portions, layers of cubical cells, the inner layer being ciliated (Fig. 5).

Elsewhere, we found columnar cells, ciliated, in a single layer, and between them were embedded mucus or so-called goblet cells (Fig. 5).

Pathogenesis of Tumor. — I shall endeavor to explain the pathogenesis of the tumor, since, so far as I know, none exists. To do so, it is necessary to consider the embryology and study branchial development, which I consider as important as the arterial development.

THEORIES OF TERATOLOGIC FORMATIONS

But, first I wish to discuss the theories advanced to explain teratologic formations. I shall discard the old theories and consider only the dominant three theories. There is, first, the theory of diplogenesis formulated by Geoffrey Saint-Hilaire and now discarded, and it would be very difficult to explain our case on that theory. The second theory is that of parthenogenesis. This theory is applicable only to the cysts of the ovary.

The third theory is that of inclusion or embedding. This is the one that interests us most, because it is the one that explains the formation of the tumor in our case. According to this theory, at various periods of embryonic life epithelial fragments are isolated in atypical places, and later they may produce the dermoid tumor.

When the inclusion is of one branchia, for example, it may produce any one of three histologic formations: (1) a simple dermoid tumor (by the inclusion only of the ectoderm), (2) a simple mucoid cyst (by the inclusion of the endoderm), and (3) a mucodermoid tumor (as in our case) when both ectoderm and endoderm are involved.

Fig. 3.—Tumor opened, showing thickness of wall and also all the partition walls and the cavities that these subdivide.

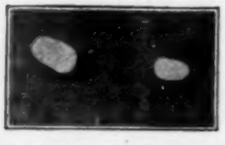


Fig. 4.—Small masses found in the interior of the tumor, showing size.

In the developing human embryo four branchial fissures form, of which the first two appear when the embryo is from 2 to 3 mm. long, the third when it measures from 3 to 4.5 mm., and the fourth when it measures 5 mm. These fissures are formed in the walls of the pharynx. They are symmetrical and extend from before backward, one above the other. These fissures do not meet, in front, thus forming

the mesobranchial space in the anterior wall of the pharynx. In the upper part of this space is situated the lingual tubercle, also called the pharyngeal tubercle. The histology of these fissures is of great importance, as it will explain the case under consideration.

At this level the ectoderm and endoderm are separated by the mesoderm, which disappears gradually

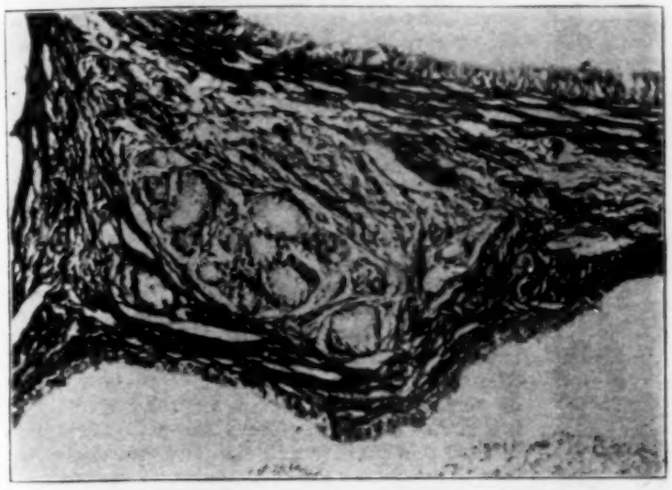


Fig. 5.—Center of gland in the partition wall. Toward one and another cavity, a cylindric epithelium with vibratile cilias may be observed; Leitz objective 3; ocular 5; tube, 190.

until the two blastodermic layers are fused. There exists a fifth fissure which, however, is regarded by some authorities as being a diverticulum of the fourth fissure. The important fact is that the fissure occurs only in the endoderm, and for this reason its inclusion could not explain our case. These fissures separate the five branchial arches, each of which contains in its interior a branch of the aortic arch. An interesting fact is that it is connected with the position of the aortic bulb with respect to the branchial fissure. Its position would be between the third and fourth branchial arch over the anterior surface of the pharynx. When the embryology of the branchial fissures and arches is understood, it is comparatively easy to comprehend the pathogenesis of these cases. If a portion of the branchial fissure becomes adherent to the wall of the arterial bulb, this portion, in its descent and transformation into the aorta and the pulmonary blood vessels, would drag down with it the included epithelial fragment as soon as the division of the trunk takes place. This explanation supports the theory of the fifth fissure as being the location of the tumor. On the other hand, it would be difficult to explain the formation of a tumor of such unusual tissues, if it were not of a similar formation.

As to which branchial fissure would be involved, I am of the opinion that it would be the third or fourth on account of the embryologic localization, as well as its ultimate evolution in the embryo.

The fact of finding pavement epithelium in some of the cavities in our specimen is sufficient reason for discarding the theory of inclusion of the tissues of the branchial sinus.

In short, the mucodermoid cyst arises from a fetal inclusion in the third and fourth branchial fissures formed by epithelial cells displaced when the arterial bulb of a unique trunk transforms itself into the aorta and the pulmonary blood vessels.

1578 Gallo Street.

ADENOMA SEBACEUM

A REPORT OF FIVE CASES IN ONE FAMILY *

J. B. SHELMIRE, M.D.
DALLAS, TEXAS

The rarity of this disease, together with the large number of cases in one family, is sufficient reason for the presentation of this paper. During my twenty-two years' work in dermatology, these are the only cases which have come under my observation. Several authorities had described this disease before its true nature was recognized.

REVIEW OF THE LITERATURE

It has been stated that Balzer in connection with Menetrier and Grandhonne investigated the histopathology and gave to the affection the name of sebaceous adenoma. Sutton states that Rayer was the first to describe the disease that we now recognize as adenoma sebaceum, and that Pringle was the first to describe the histology of the lesions. In the majority of the cases described, the lesions consisted chiefly of hypertrophy of the sebaceous glands, as in Case 1 of this report. Crocker believes all the appendages of the skin are involved and regards the affection as a "pilosebaceous hidradenoma." In Case 2 there is an increase in the number of hair follicles. Hartzell, in his late work, states that a limited number of cases have been reported, but that it is quite certain that not all the cases reported under this or similar titles represent the same affection, some undoubtedly being examples of benign cystic epithelioma. In this country

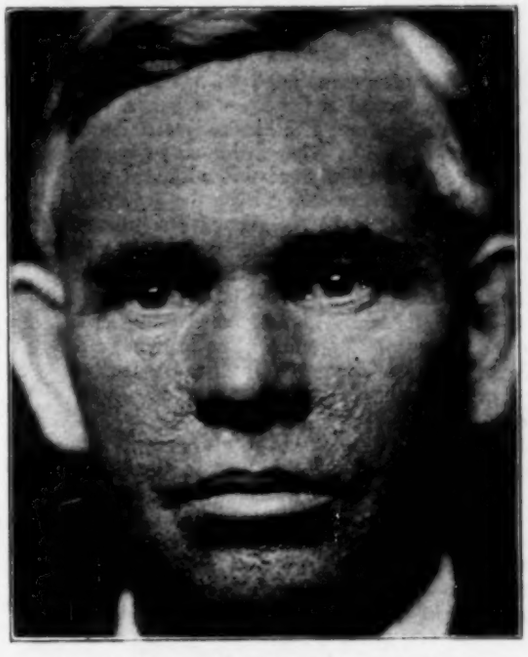


Fig. 1 (Case 1).—Symmetrical distribution of adenoma sebaceum. Pinhead to pea-sized lesions scattered over the face, being especially numerous on the chin, nose and adjacent surfaces.

cases have been reported by Pollitzer, Gottheil, Sutton and probably others. Pusey states that it is rare in America, but not uncommon in the pauper institutions of Europe. All authors lay stress on the fact that it

* Read before the Section on Dermatology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

is more common among the poor, ill fed, and feeble-minded.

The cases which I wish to report occurred in country folk of more than average appearance and intelligence. While a few cases have been reported as developing in adults, the majority are congenital, the lesions usually appearing in the first decade of life. The disease may appear in family groups, Spofford Taylor having reported three cases in one family. I can find no record to match my report of five in one family.

Fig. 2 (Case 2).—Wide distribution of the lesions which cover the chin and extend under the lower jaw down on to the neck. Over the left malar eminence the lesions are especially large.

Fig. 3 (Case 3).—Condition the same as that in Case 2. The large lesion on the left malar eminence is probably a fibroma.

REPORT OF CASES

Case 1.—A white man, aged 42, married, stated that the eruption first appeared at the age of 6 years. The lesions are pinhead to pea-sized and symmetrically distributed over the face (Fig. 1). They are more numerous and larger on the chin, nose and adjacent surfaces, but a few are scattered over the forehead. While many of the lesions are of the normal color of the skin, some are of a deep purplish hue. Telangiectasis was fairly well marked. In some instances the lesions are confluent.

Case 2.—A girl, aged 12, had an eruption that began at the age of 6 months. The lesions were more numerous and more widely distributed than in any of the other patients. They developed earlier in this case than in any of the others. The lesions are symmetrically distributed and most numerous about the chin and in the nasolabial folds (Fig. 2). There are many under the lower jaw, and quite a few on the neck. There are a fairly large number on the forehead, together with one large rounded lesion, which probably is a fibroma. In size they are from that of a pinpoint to that of a half-pea. While few are of normal skin color, most of them are pinkish. Over the left malar eminence the lesions are larger, aggregated, and a few are confluent, giving rise to an elevated patch 1 by 2 cm. in extent. On both upper eyelids there are numerous pinpoint lesions. There are a few brownish moles on the face; and on the floor of each nostril, near the entrance, are two small verrucae.

Case 3.—A girl, aged 10 years, had an eruption that began at the age of 5 years. The history of this case is merely a repetition of that of Case 2, although the lesions are less numerous and not so widely distributed. On the left malar eminence is a soft, elevated lesion, probably a fibroma (Fig. 3). To the right of the outer canthus of the right eye is an elevated, soft, dark brown growth, 2 by 3 cm. in size.

Case 4.—A girl, aged 6 years, presents lesions, the character and distribution of which resemble those in Case 3, but are somewhat smaller. On the forehead is a linear, elevated lesion, probably a fibroma (Fig. 4).

Case 5.—A boy, aged 3 years, in whom the eruption was just beginning to appear, had a few pinhead-sized lesions of the color of the normal skin on the cheeks, and a linear, developmental defect on the forehead (Fig. 5).

Fig. 4 (Case 4).—The lesions are somewhat smaller in this patient. The elevated patch on the forehead is a probable fibromatous growth.

Fig. 5 (Case 5).—The patient, aged 3 years, presents the eruption in its initial stages. The lesions are pinhead sized on the cheeks with noticeable linear marks on the forehead.

HISTOPATHOLOGY

(Report by Dr. J. H. Black.)

Macroscopic Appearance.—The mass is roughly spherical in shape and approximately 5 mm. in diameter. Firm. The cut surface is smooth and somewhat translucent.

Microscopic Appearance.—The epidermis is thinned, and the interpapillary processes are very short or entirely absent over the greater portion of the mass. The corium is much thickened; the papillae are wide and blunt or entirely absent. The blood vessels are not increased in number or size. Occasional small areas of round-cell infiltration are seen. The sebaceous glands are increased in number and size and extend deeply into the corium (Fig. 6). Some of these show small cystic dilatations. The hair follicles also are much increased in number, particularly in the section from Case 2.

Treatment.—Radium, the roentgen ray, electrolysis and carbon dioxid snow were considered. The family lives 60 miles from Dallas. The father is a tenant farmer and of moderate means. These facts had some bearing on the method of treatment selected, and consequently it was thought best to first try the carbon dioxid snow. As a preliminary report, it may be said that fair progress is being made in the destruction of the lesions by means of this agent. The oldest girl has been given seven treatments, the second six and the third five. The pigmented growths and other large developmental defects have responded to this plan of treatment in a satisfactory manner.

Results.—Many of the sebaceous lesions have entirely disappeared. There has been practically no resultant scarring. I feel sure that in the course of time all of the little tumors can be successfully eradicated. On the very small ones I shall use electrolysis.

ABSTRACT OF DISCUSSION

DR. JAMES HERBERT MITCHELL, Chicago: Several years ago Dr. Ormsby and I saw three cases in one family. The patients were a Polish woman and two daughters, one aged 5 and the

Fig. 6 (Case 6).—Microscopic section. The cross-section shows the increase in the hair follicles and sebaceous glands.

other 7. There were several other children in the family, but there was no opportunity of seeing them, so I do not know their condition. No treatment was given these patients because we could not get them to come again. The mental condition in this series was much the same as in the cases of Dr. Shelmire; that is to say, they were rather abnormally bright children. A few days ago a patient came for observation after a year's absence. The patient had been treated with roentgen rays and carbon dioxid snow, and he was remarkably improved.

DR. RICHARD L. SUTTON, Kansas City: I was interested in Dr. Shelmire's paper because of the large number of persons affected in one family and also because of the excellent results secured by the very simple method of treatment employed. I should hesitate to use the roentgen ray in such cases and electrolysis is extremely painful. The carbon dioxid snow apparently gave excellent results. Not many cases of adenoma sebaceum occur in this country, but it is a common affection in Great Britain. Often there is an associated molluscum fibrosum. This family group appears to be far more intelligent than the average patient afflicted with this disease.

DR. JESSE B. SHELMIRE, Dallas, Texas: I was afraid to use the roentgen rays on these children. The lesions were very numerous and covered large areas. I have used the carbon dioxid snow in various affections without any bad results. This influenced me in using that method of treatment.

Military Hospitals in Italy.—In time of peace Italy had twenty-eight principal military hospitals and two auxiliary, with six convalescent stations and thirty-one infirmaries. In September, 1917, there were 948 *ospedali di reserva*, twenty-one convalescent stations, 146 Red Cross hospitals and one hospital of the Order of Malta, with several hundreds of thousands of *posti-letto*.

Clinical Notes, Suggestions, and New Instruments

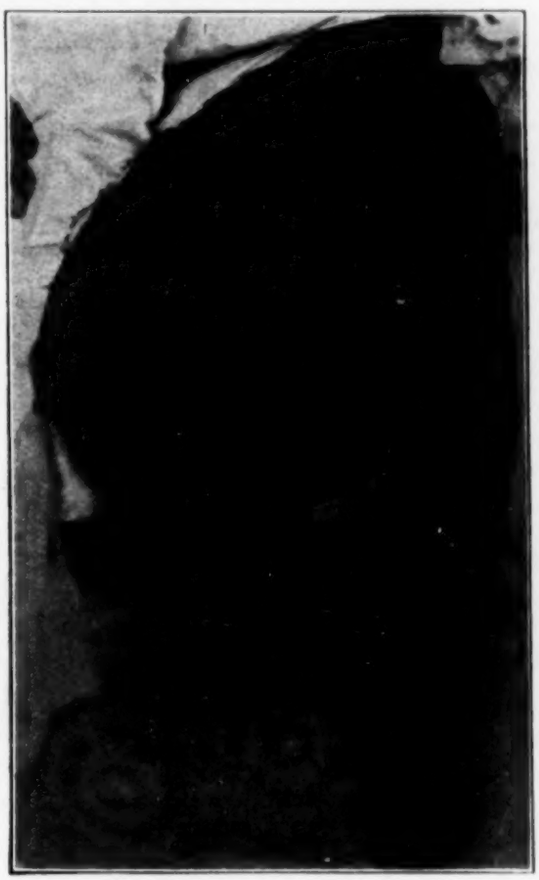
AN ATYPICAL FIBROLIPOMA OF UNUSUAL SIZE

J. A. KING, M.D., TLAHUALILO, DURANGO, MEXICO

The unusual size and the difficulty of classification of this tumor make the case worthy of report.

In April, 1917, A. H., a nearly pure-bred Indian girl, aged 21, presented herself to me for treatment. She was well developed and with all organic functions apparently normal. She gave the history of having been born with a small nodule or induration of the skin immediately below the inguinal region in the left thigh, which soon began to increase in size and extend downward.

The entire left thigh was greatly increased in size as compared with the right. The epidermis of the skin covering the external aspect and the outer half of the posterior and anterior aspects was apparently normal, but the deeper layers of the skin were very much thickened and indurated and seemed to be continuous with the subcutaneous tissue; but beginning at the middle of the anterior and posterior aspects the skin assumed a pachydermatous nature and so continued, covering the whole of the tumor, which occupied, and was pendent from, the entire internal aspect of the thigh. Above, the tumor terminated abruptly just below the perineum, and below about an inch posterior to the inner condyle of the femur, thus forming a pedicle whose greater diameter was 13



Anterior view of tumor. Note roughened, pitted condition of skin.

inches and whose thickness was that of the thigh. The pendent mass hung nearly to the patient's shoe tops and was covered with a thick, roughly pitted pachydermis, an idea of which may be obtained from the accompanying illustration. The left labium majus was greatly thickened, enlarged and indurated, and had the appearance of elephantiasis. This

condition had been pronounced by other physicians as elephantiasis, and operation was discouraged; but as she was able to walk only with great difficulty, she gladly accepted my offer to operate. An incision 13 inches long was made along the inner border of the thigh; the skin was found to be very fibrous and an inch thick, and prolongations of this tough, hard, fibrous tissue were found to extend deeply into the tumor base of fat, and islands of it were found throughout the tumor. In fact, this fibrous tissue was nearly as prevalent as the fat, and was so tough that it was difficult to puncture it with a needle. There was nothing resembling a capsule, as in lipoma, but the fatty part of the tumor was permeated by a network of veins as in cavernous lipoma, although very few arteries were encountered.

Owing to the fact that for seven years we nave been at the mercy of patriotic (?) revolutionists and for obvious reasons were loath to replenish our supply of instruments, I began the operation with a very deficient supply of hemostatic forceps, and having to ligate so many veins, it took me considerable time to complete the operation. The skin covering the posterior aspect of the tumor was the same as that of the anterior; and as the fibrous tissue was very much less vascular than the fatty tissue, the posterior flap became gangrenous and on the third day the patient was again anesthetized and about a pound of gangrenous tissue removed, whereupon she went on to a slow but steady recovery. The part of the tumor removed weighed 26 pounds.

At present, a year after the operation, the left thigh measures 29 inches in circumference at the middle third, while the right measures 17 inches at the same level.

This tumor, while not typical of any, had characteristics of the hard fibroma, the lipoma telangiectodes or cavernous lipoma, and the pachydermis would identify it with the molluscum fibrosum group. No microscopic examination of the tissue was made.

THE TRIAL FRAME FOR TEST LENSES, WITH DEMONSTRATION OF A NEW MODEL

WALTER L. PYLE, M.D., PHILADELPHIA

The ordinary trial frames and test lenses seldom conform to the modern standards of the skilful medical refractionist. In hospitals and dispensaries they are especially faulty, and often ludicrous. It is most important that the trial frame shall be firmly and snugly placed on the sides of the nose and

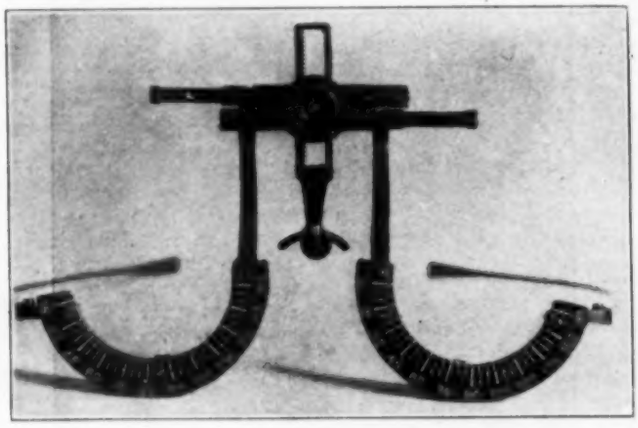


Fig. 1.—New model of trial frame, front view.

adjacent cheeks, in approximately the position in which the prospective spectacles or eye-glasses will be worn. In this respect all frames fixed to mechanical instruments, such as optometers, are at fault, often clumsy, and are signally deficient for accurate testing.

The prime requisites for a trial frame are rigidity, lightness, proper position on the face, and ease of general adjustment and manipulation of the trial lenses. There is also a necessity for individual adjustment of the two sides, to permit perfect binocular centering.

The test lenses, carefully centered, should be placed before the eyes, properly inclined, and just clearing the eyelashes. The bridge of the frame should not wound the skin or cause irritation or pain. Rotation of the cylindric lenses must be easy, silent and unnoticeable, to prevent even momentary diversion of the patient's attention. The frames should be grooved and slotted to allow rotation of the cylinders at least 180 degrees. The cells with the cylinders should have short handles, and the rotation should be effected by light contact

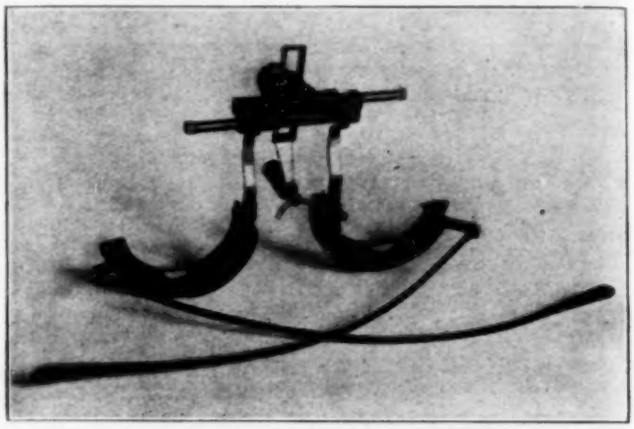


Fig. 2.—New model of trial frame, back view.

on these handles with the tip of the first finger. It is impossible to practice noiseless and smooth rotation, when using cells without handles. The placing of the trial lenses in the spring clips is awkward, disconcerting to the patient and trying to the oculist. Only by the use of a properly grooved and slotted trial frame can the ideal examination of the refraction be made.

For many years I employed the best types of the standard trial frames, with minor modifications suggested by Dr. George M. Gould and myself. For the last six years I have used one of three frames made under the direction of Dr. Gould. Generally speaking, this has been satisfactory, but it fails to permit bilateral individual adjustment. I showed a modification of this frame last year (1917) at the meeting of the Section on Ophthalmology of the American Medical Association, but this was lacking in the necessary central universal adjustment.

The trial frame which I present now has a universal vertical and horizontal adjustment by rack and pinion movement, permitting adaptation for any peculiar facial conformation. This adjustment is placed in the center of the frame. The frame is grooved for two lenses. The front groove, for the cylinders, is slotted to allow rotation of the cells with handles. A third test lens may be placed in front of the frame resting on three small hooks.

The bilateral independent adjustment is effected by two double screws operated on the upper outer side of the frame. The frame is placed on the face, quickly set by the universal adjustment, and supplemented when necessary by the movement of the independent double-screw adjustment, until the lenses are properly centered.

Broad shell coverings on the inner sides of the two cell holders permit the snug application of the frame to the sides of the nose and cheeks. The nose piece proper is used only to fix and maintain the proper position.

The graduated semicircles are enameled in dull black with distinct white lines and figures, allowing the maximal ease in reading the axes. The whole frame is finished dark and dull, to prevent annoying reflections.

1931 Chestnut Street.

Produce the Essentials.—As an ever increasing percentage of our manpower is drawn overseas, the problem of producing adequate amounts of essentials becomes increasingly difficult. There is no possible escape from a possible shortage of the necessities of life other than through a diversion of productive energy from the nonessential to the essential industries.—H. G. Moulton, *Economist.*

AN OPERATION FOR THE CORRECTION AND PREVENTION OF PARALYTIC GENU RECURVATUM

WILLIS C. CAMPBELL, M.D., MEMPHIS, TENN.

Professor of Orthopedic Surgery, University of Tennessee, College of Medicine; Orthopedic Surgeon, Memphis General, Lucy Brinkley, Baptist Memorial and St. Joseph Hospitals.

On account of the mechanical arrangement and location, the unstable paralytic knee remains a difficult problem, while

Union of lower third of patella to tibia, the upper two thirds forming a stop joint; also osteotomy of femur for genu valgum.

many operative procedures about the ankle and other joints have been most satisfactory.

In paralytic genu recurvatum I have employed a procedure which has been successful in one instance and applied in several others too recent for consideration. The object of the measure is to unite the lower third of the patella to the anterior aspect of the tibia just below the knee joint, leaving the upper two-thirds free but articulating with the femoral condyles in extension thus forming a stop joint and mechanically preventing hyperextension.

TECHNIC

A linear incision is made through the skin and superficial structures in the midline for 5 or 6 inches, exposing the patella and the ligamentum patellae. The tendon above the patella is incised by a Z-shaped plastic lengthening (commonly employed in lengthening the Achilles tendon). The capsule is next incised, making the patella and the parts of the joints easily accessible. The cartilage of the lower third of the patella is removed to the spongy bone; the periosteum is stripped one-eighth inch on the anterior surface. A cavity on the upper anterior aspect is now made in shape and size to receive the lower third of the patella. The patella is then inserted into the receptacle and the periosteum of the patella sewed to the periosteum about the margins of the cavity, thus leaving the upper two thirds of the patella to act as a stop joint and preventing hyperextension. The patella tendon is now sewed at neutral tension, fascia and skin closed, and plaster applied in 20 degree flexion. After eight weeks, a brace is applied and worn for six months

COMMENT

The patella remaining attached to the periosteum and ligamentum patellae is in no sense a free graft, but has circulatory conditions obviously more apt to promote union. In fact, I have successfully applied the same principle in both paralytic and tuberculous cases when bony ankylosis was desirable, except that the entire posterior aspect of the patella was denuded and a corresponding portion of the adjacent femur and tibia.

REPORT OF CASE

A girl, aged 16, with genu recurvatum and genu valgum, was operated on, July 1, 1917, as described above, except that the genu valgum was corrected by supracondyloid osteotomy. The result three months later is indicated by the accompanying roentgenogram, which shows firm bony union of the patella to the tibia. Since operation one year has elapsed, and the condition remains unchanged.

MADURA FOOT: REPORT OF A CASE

HORATIO NAVARRO, M.D., SANTA MARTA, COLOMBIA

J. C., Colombian laborer, in the employ of the United Fruit Company at Santa Marta, Colombia, admitted to the hospital with a diseased foot, had had measles, smallpox and occasional attacks of malaria. There was no history or indication of syphilis, or of any other serious illness. The family history was without interest. In general appearance the patient was healthy, with the exception of his foot and an acne rosacea.

He stated that the trouble with his foot began about a year before admission with small nodules appearing on the external portion of the dorsal surface. These grew in size and increased in number until almost the whole foot was involved, localizing especially at the toes. When the patient was admitted, the foot was greatly swollen and enlarged, particularly in the transverse diameter, being almost twice the size of the normal right foot. The first and second toes had lost their normal appearance, having been completely invaded by numerous nodules. A seropurulent fluid exuded from small, yellowish white granules on the surface of the foot. Some of the granules were as small as a pinhead, and others were fungating nodules as shown in the accompanying illustration.

Madura foot.

It was possible to pass the probe through these nodules down to the bony structure without producing pain, and with very little bleeding. The exuding fluid from the sinuses and the fungating nodules was examined under the microscope, and yellowish looking mycelian elements were found to be present. They coincided in appearance with the fungus known as *Dyscomyces madurae*, belonging to the genus *Nocardia*, which is responsible for the comparatively rare condition known as Madura foot. Apparently the same variety was reported by Lindenberg in Brazil.

As a rule this disease begins in the sole of the foot, but in this case the first lesions were noted on the dorsal region and none were found on the under surface. As far as is known this is the first case of Madura foot reported in Colombia.

The treatment consisted in the administration of maximum doses of the diarsenol brand of arsphenamin followed by large doses of potassium iodid; but no improvement was noted. Subsequently extensive incisions were made, the first and second toes amputated, and thorough curettement done in all the sinuses and incisions. After the surgical treatment the wounds were dressed with antiseptics, and the patient made an uninterrupted recovery, and was discharged from the hospital.

REPORT OF A CASE OF PRIMARY TUBERCULOSIS OF FAUCIAL TONSILS

T. E. OERTEL, M.D. (AUGUSTA, GA.), AND GEORGE A. GRIOT, M.D. (ST. LOUIS)
Major and Captain, Respectively, M. R. C., U. S. Army
CAMP LOGAN, HOUSTON, TEXAS

While tuberculosis is a very prevalent disease affecting practically all the tissues of the human body, being especially frequent in the glandular system, it is less often or seldom found as a primary infection of the faucial tonsils.

The following case occurred in the otolaryngologic service of the base hospital at Camp Logan, Texas.

REPORT OF CASE

History.—W. H. F., a well nourished and developed white male nurse of German nationality, aged 26, stated that two years before, for a period of six months, he had had charge of a tuberculous ward in a general hospital for soldiers, located in Wisconsin. The patients in his charge had principally advanced cases of pulmonary tuberculosis. He had been away from the hospital for one year. The family history was negative. In December, 1917, he had had an attack of tonsillitis of a type unknown to him, lasting about two weeks. He had not recovered completely from this attack, as a soreness had persisted in both tonsils, more pronounced in the left, until the time of consultation, March 7, 1918. Also he had noticed a swollen condition of the left tonsil which had persisted since the attack of tonsillitis in December, 1917. Four weeks previous to consultation, he had complained of hoarseness which would last for a few days, then subside for a day or two, and again recur. For the previous two weeks hoarseness had been constant, growing progressively worse. Eating sour fruits, such as lemons or grapefruit, caused irritation of the throat, but did not cause coughing.

Physical Examination.—The general appearance of the patient was that of a normal, healthy man. His appetite was good. He had had no night sweats and no loss of weight, and he slept well. He coughed very little, expectorating a yellowish material when clearing his throat, about two or three times an hour during the day. He did not cough up any pulmonary secretion. The skin was normal.

In the ears, both conchae were normal. The right canal was negative. In the left a small amount of mucopurulent material was found. The right membrana tympani was covered with a whitish and opaque deposit. The light reflex was absent. The left revealed the same condition as the right, except that it had a small perforation in the posterior inferior quadrant. The discharge had existed for fifteen years, dating from an attack of measles.

Examination of the gastro-intestinal system revealed the fact that the mouth was normal in contour and color, and the tongue, esophagus, stomach, liver and intestine negative.

Examination of the respiratory system beginning with the nose showed that the septum had deviated to the right and that the left inferior turbinate was hypertrophied. The nasopharynx and the sinuses were normal. A general anemia of the larynx was found.

The epiglottis was very much enlarged, about half an inch in thickness, and presented a large eroded area on the left side. It was anemic and covered with granular masses, the size of small birdshot, yellowish and semitranslucent. A mucopurulent secretion was noted, covering both the epiglottis and the structures of the larynx. The arytenoid cartilages were very much enlarged. The left was much larger than the right, having a distended appearance as though it were filled with air. The left vocal cord was swollen, with a large ulcerated area near the middle and much elevation along the edge. The right cord was not much thickened and presented a small, ulcerated area where it approximated the ulcer of the left cord. The trachea presented a thickening of ring immediately below the left vocal cord. In the right lung, fine râles were audible in the suprascapular space after cough. In this region, over an area the size of a dollar, vocal and tactile fremitus was slightly increased. The left lung was negative.

The right tonsil was the size of a small hickorynut; the posterior third presented an ulcerous excavation, bandlike in form, with the surface roughened and studded with numerous little, yellowish, elevated nodules, the size of a mustard seed shot and extending from the upper to the lower pole, taking in the posterior third from the apex of the pillars to the base of the tonsils. This ulcerative process had eroded the parenchyma almost to the capsule. A small remnant of the parenchyma remained on the posterior pillar. The pillars showed no departure from the normal.

The left tonsil presented an ulcerated area triangular in form, covering the anterior two thirds of the tonsil below and leaving a small portion of tonsillar tissue posteriorly unaffected. The depth of the ulcer and its appearance were similar to those already described in the right tonsil, with this difference, that considerably more tonsil tissue was destroyed. Perhaps this would indicate that the infection had existed primarily in the left tonsil. The cervical glands were palpable on both sides and slightly enlarged. The submaxillary, axillary and inguinal glands were negative. The temperature ranged from normal to 99.2 F.

Both tonsils were removed, March 9, 1918, under general anesthetic by dissection and snare. There was very little hemorrhage, and the fossae presented a smooth appearance.

Laboratory Report (by Captain Stone).—The right tonsil was 1.5 by 2 by 0.8 cm. thick. It was irregular in outline. The capsule showed an uneven surface. The inner surface of the tonsil appeared uneven and granular, and of a mottled dark red, with points 1 mm. in size and almost white. The mucous membrane was apparently entirely eroded. The left tonsil resembled the right, but was not quite so thick. In the microscopic examination, tubercle bacilli were found in mucus recovered from the larynx.

The patient was sent to a tuberculosis sanatorium, March 12, 1918.

PRESERVATION OF COMPLEMENT

MEYER D. MOLEDEZKY, B.Sc., M.D., CHICAGO

A somewhat extensive series of articles have appeared relative to the preservation of complement, and many ingeniously worked out methods have been advocated. It is not the intention now to discuss the merits or demerits of other methods but to offer a method, simple, inexpensive and reliable, which I have used.

I have found that complement from freshly bled guinea-pig blood, centrifuged, is not so powerful as that which stands over night in the refrigerator and is permitted to separate from the slowly contracting clot. This has repeatedly been observed and corroborated in an extensive series of experiments covering a long period of time, by titrating the same complement shortly after obtaining the blood, and likewise the following morning, using the same amboceptor and sheep corpuscles.

For the preservation of complement, the worker needs a vacuum bottle into which finely cracked ice is dropped until the bottle is filled almost to the neck, and then covered with a small amount of ordinary bath or sea salt. The complement, pipetted into a test tube and corked, is now pressed into the bottle. A piece of string, tied to the tube just below the lip margin, is permitted to hang out of the vacuum bottle when corked, enabling ready access to the tube; the bottle is then placed in the refrigerator. In a short time the complement becomes frozen solid, and in this condition it retains its strength indefinitely, thus serving as a miniature refrigerating plant. It is necessary to remove the tube and empty the water from the bottle, replenishing the ice and

salt at least every forty-eight hours—preferably daily. In order to use the complement, the water from the vacuum bottle may be poured into a beaker or other receptacle and the frozen complement tube set into it to thaw. If the entire amount is not used, the balance may be treated as before and the complement in this manner may be preserved until the last drop is used. The preliminary titration of amboceptor, corpuscles and complement each time used should not be abolished because of the foregoing, as the former two may and do vary, even though complement does not. Caution is to be exercised in filling the vacuum bottle, not to pack the ice into it. The ice is to be dropped in gently, as otherwise it becomes too compact, and when the tube is inserted it may break the bottle; or the tube fits into a clumped ice pack which, instead of hugging the tube, because of salt and the fine ice particles keeping it frozen, forms a pocket into which the tube rests freely, and prevents freezing by liquefaction of the ice in immediate contact with it.

25 East Washington Street.

Military Medicine and Surgery

MIXED INFECTION (MENINGOCOCCUS AND PNEUMOCOCCUS) MENINGITIS

J. G. FITZGERALD, M.D. (TORONTO)

Major, R. A. M. C.; Associate Professor of Hygiene, and Director, Connaught and Antitoxin Laboratories, University of Toronto; in Charge of No. 39 Mobile Laboratory.

B. E. F., FRANCE

There have recently appeared three communications dealing with the subject of meningococcus and pneumococcus infection of the meninges in persons in which the primary infecting micro-organism was the meningococcus. The first two, by Netter and Salanier,[1] placed on record a series of cases observed in children. Mathers[2] has also described a case which he observed in an infant. The relative frequency of this condition is not as yet precisely determined, though it is believed to occur in about 5 per cent. of cases.[3] That it may occur more commonly than is at present supposed is possible, judging from recent work. In a series of twelve cases of meningitis (cerebrospinal fever) the pneumococcus as well as the meningococcus was found in three cases.

From such a limited number of cases it is impossible to draw any conclusions; but it is hoped that as a result of this publication it may be possible to direct the attention of other workers to the desirability of following the case of cerebrospinal meningitis in such a way that, if the pneumococcus appears in the cerebrospinal fluid during the course of the disease in a given patient, the fact may be duly recorded.

The study of cerebrospinal meningitis until very recently has often not been conducted with the idea of close correlation of clinical and laboratory observations. In this connection it is necessary to have in mind the fact that the laboratory examination of a few specimens of cerebrospinal fluid from a patient suffering from meningitis is not enough. Every sample of fluid withdrawn must be examined bacteriologically if we are to have exact information as to the number of persons with pure meningococcus meningitis who subsequently show the presence of pneumococcus in the cerebrospinal fluid.

The statistics as to the value of antimeningitis serum in the treatment of epidemic meningococcus meningitis are all more or less open to this objection, because it is highly probable, if not certain, that not all the observers who have reported the results in large series of cases (including Flexner, Dopter, Sophian, Netter and Debré) have had the results of the bacteriologic examination of every specimen of cerebrospinal fluid withdrawn in all the cases in the series which they have reported. Similarly, the work of the Meningitis Division of the Research Laboratory of the Health Department of New York City, which is probably the best example of civilian endeavor to control meningitis, is hampered because the study of the cases from beginning to end, clinically and bacteriologically as well, has not been possible.

In a given case of meningococcus meningitis, when the outcome is fatal, unless every sample of fluid withdrawn is examined bacteriologically, the result cannot be counted as a failure in serum treatment. The progress of the patient clinically must be correlated with the laboratory finding.

It is recognized that in many hospitals, both in America and on the other side of the Atlantic, just such carefully correlated clinical and bacteriologic studies have been made in cases of meningococcus meningitis. This is a special plea for similar work in all cases in which it is possible. The importance of cerebrospinal meningitis from a military standpoint has stimulated renewed interest in the subject, and the special means devised in several of the Allied countries for dealing with the problem have laid the foundation for future civilian efforts. In England under the auspices of the Medical Research Committee, and under the direction of Lieut.-Col. M. H. Gordon, C. M. G., and his co-workers, a very complete organization for this purpose has been established.

The cases herein recorded were seen in a military base hospital in Canada. In nine of the twelve cases the infection was due to the meningococcus alone, and in all of these cases the patients recovered. Of the other three cases, one was a doubtful case of mixed pneumococcus and meningococcus infection:

CASE 1.—C. A. complained of headache on a Friday afternoon; he became quite ill during the night, and the next morning was removed to the hospital. A lumbar puncture was done, as he now showed other symptoms of meningitis. The cerebrospinal fluid was turbid, and many smears by Gram's method showed the presence of gram-positive and gram-negative diplococci. Cultures of the fluid were made, but only the pneumococcus was recovered in culture. The patient rapidly grew worse and died the next evening.

In this case the diagnosis of mixed infection rests on the smears made of the first specimens of cerebrospinal fluid examined; the patient died so soon after admission to hospital that complete cultural studies were not possible. It may be argued that in this case we were dealing with a pure pneumococcus infection. Such is not the opinion of those who have had the opportunity of studying the smear preparations.

In the other two cases fortunately the laboratory findings were more complete:

CASE 2.—H. G. R., aged 26, complained of severe headache and general malaise, Jan. 28, 1918. He was admitted to the hospital and it was found that there was considerable retraction of the head and rigidity of the neck muscles. A lumbar puncture was done and 10 c.c. of turbid fluid under consider-

1. Netter, A., and Salanier, M.: Bull, et mém. Soc. méd. d. Hôp. de Paris, June 28, 1917, p. 789; Arch de méd. d. enf., September, 1917, p. 449.
2. Mathers, George: Mixed Infection with the Pneumococcus in Epidemic Meningitis, THE JOURNAL A. M. A., Nov. 24, 1917, p. 1778.
3. Gordon, M. H.: Personal communication to the author.

able pressure were withdrawn. The patient was at once transferred to the isolation section of the base hospital. Many pus cells and a few extracellular and intracellular gram-negative diplococci were found, from fluid withdrawn. Next morning the meningococcus was isolated in pure culture. Between January 30 and February 3, lumbar punctures were done every twelve hours and antimeningitis serum given intraspinally. During this time the patient's condition improved, and February 4, at 8 a. m., the temperature was normal for the first time since the patient's admission to the hospital. At that time his pulse was 80 and respiration 20. The examination of the spinal fluid withdrawn at 11:45 p. m., February 3, revealed a considerable number of pus cells, a few intracellular gram-negative diplococci, but no extracellular organisms. The next lumbar puncture was done at 11:45 a. m., February 4. The examination of the fluid withdrawn revealed the presence of many meningococci, and in addition, many gram-positive diplococci, which, when cultivated, were found to be pneumococci. At this time the patient's clinical condition was so satisfactory that only the laboratory findings warranted the bad prognosis which was given as soon as pneumococci were found in the cerebrospinal fluid. The patient became unconscious the next day, and gradually sank and died at 8 a. m., February 7, less than seventy-two hours after pneumococci were found for the first time in the cerebrospinal fluid.

In this case, after four or five doses of serum had been given, the patient's condition was so much improved, and the change in the character of the spinal fluid was such, that a favorable outcome was anticipated. It is a matter of further interest that the bacteriologic examination of the fluid afforded an indication of the probable fatal termination of the illness, some time before there was any marked change noted in the patient's general physical condition. The pneumococcus isolated in this case was a strain of Type I.

CASE 3.—R. B., aged 18, first complained of frontal headache, Feb. 10, 1918. On the morning of February 11, he had nausea and vomiting and headache. He became drowsy and unable to walk. When he was examined, marked retraction of the head, rigidity of the neck, and Kernig's sign were noted. A lumbar puncture was done and 25 c.c. of turbid fluid under considerable pressure was withdrawn. Later the same day, a second puncture was done and 60 c.c. of fluid withdrawn, and 30 c.c. of antimeningitis serum administered intraspinally. The examination of the cerebrospinal fluid showed many pus cells, a few extracellular and many intracellular gram-negative diplococci. Between February 11 and 16, nine lumbar punctures were done, cerebrospinal fluid was withdrawn and antimeningitis serum administered after each withdrawal of fluid. February 16, the fluid was only slightly turbid, and while pus cells were quite numerous in the film preparations, no extracellular or intracellular meningococci were found. Coincident with the disappearance from the cerebrospinal fluid of all meningococci, there was marked improvement in the patient's condition. It was noted, February 16, that the patient was much improved; only slight headache was complained of, the temperature was 98.2, the pulse 80, and respirations 20, at 8 p. m. The fluid withdrawn at 11 p. m. on this date also showed no micro-organisms.

February 17, the patient's condition suddenly became very grave; there was marked delirium, the pulse was 120, the temperature 102, and respirations 20. A lumbar puncture was done, and 85 c.c. of very turbid fluid were withdrawn; the film preparations showed great numbers of gram-positive diplococci which on culture were found to be pneumococci Type II.

The patient gradually sank, and died at 12:15 a. m., February 18, less than forty-eight hours after pneumococci were found in the cerebrospinal fluid.

All the cases found in the literature have resulted fatally, with the exception of those reported by Netter and Salanier in which recovery of three patients is recorded.[4] The use of Type I antipneumococcus serum is certainly indicated when the organism producing the mixed infection is a strain of this type of pneumococcus.

CHRONIC ENDOCARDITIS WITHOUT ACUTE ONSET

LOUIS M. WARFIELD, A.B., M.D. (MILWAUKEE)
Captain, M. R. C., U. S. Army
JEFFERSON BARRACKS, MO.

At no time have physicians had such a wonderful opportunity to examine thousands of supposedly healthy men as they are having today. Some of our ideas in regard to the relationship of certain infectious diseases to the development of chronic valvular heart disease have been abundantly confirmed, and other ideas have had to be modified.

We are having under observation in hospital men who, so far as they know, are well. Many times it falls to our lot to see the beginning of disease long before we should have seen it had the man waited for the development of symptoms before presenting himself to us for advice. In civilian life the latter is what happens, so that even our best textbooks detail symptoms that are not necessarily the very earliest, although they may be the earliest symptoms that made the patient consult a physician.

For years it has been taught that rheumatism and its associated diseases, chorea, tonsillitis, and growing pains in childhood, were responsible for most of the chronic deforming processes affecting the aortic and mitral valves in young persons. In men, disease of the aortic valves leading to aortic insufficiency was more common; in women, disease of the mitral valve leading to mitral stenosis was more common. Disease of the mitral valve leading to mitral insufficiency was about equally common in the two sexes. So far as I know, congenital syphilis has not been found to be a factor in producing aortic valve disease as acquired syphilis has.

The men who have been examined at the Recruit Depot, Jefferson Barracks, Mo., and on whom the statistics that follow are based, were for the most part men under 31 years old. About one fourth of the number were mere boys under 20. A few were as old as 39, but they were a very small percentage of the total number examined.

My attention was directed early in the work to the total absence of etiologic factors in cases of true mitral stenosis and of aortic insufficiency. Mitral stenosis is a lesion which is so definite that no mistake should be made in the diagnosis of the well marked cases. It has come to my attention, however, that many men have been given their discharge from the Army on account of supposed mitral stenosis. Careful reexamination of these both by myself and others has revealed absolutely normal hearts. Cases here reported as mitral stenosis were most carefully examined and no case was diagnosed as mitral stenosis which did not have definite presystolic thrill, presystolic rumble ending in a definite snappy first sound. The left ventricle in no case showed evidence of enlargement.

In spite of the most careful questioning there were instances in which there was no history obtainable of

4. Netter, A., and Salanier, M.: Arch. de méd. d. enf., September, 1917, p. 449.

any infection that presumably could have accounted for the disease of the heart valves. Syphilis could be ruled out in all cases except in the few older men who actually gave a history of syphilis.

My statistics include the records of the examination of 43,427 men between the ages of 18 and 39. About 15,000 of these were examined by me personally during the routine examination of the men. The suspected cases were noted and held for further study. The cases among the rest of the 43,427 men were those referred to me that were picked out of the routine examinations and given more extended study. In this way I feel that we caught all the heart lesions occurring among this group of men. There were 24,002 drafted men and 19,425 volunteers.

Condition	No. of Cases
HEART LESIONS	
Aortic insufficiency	22
Mitral stenosis	29
Mitral insufficiency with hypertrophy of left ventricle	19
Mitral insufficiency with no hypertrophy of left ventricle	87
Total (0.38 per cent.)	157
INFECTIOUS DISEASES	
Acute articular rheumatism	62
Tonsillitis	10
Chorea	1
Growing pains	11
Diphtheria	1
Pneumonia and typhoid (when 3 years old)	1
Scarlet fever	4
Measles	2
Malaria	2
Smallpox	1

MITRAL STENOSIS, TWENTY-NINE CASES

Rheumatism	8
Tonsillitis	4
Chorea	1
Growing pains	5
Diphtheria	1
Pneumonia and typhoid	1
Scarlet fever	1
Total	21

In eight cases (27.5 per cent.) there was no history of any infection.

AORTIC INSUFFICIENCY, TWENTY-TWO CASES

Rheumatism	4
Syphilis	2
Tonsillitis	1
Measles	1
Smallpox	1
Scarlet fever	1
Total	10

In twelve cases (54.5 per cent.) there was no history of any infection. There was one basketball player, and there were several athletes, including one long distance runner. None had ever had symptoms.

MITRAL INSUFFICIENCY, ONE HUNDRED AND SIX CASES

Rheumatism	50
Tonsillitis	5
Growing pains	6
Scarlet fever	1
Malaria	1
Measles	1
Total	64

In forty-two cases (39.6 per cent.) there was no history of any infection.

At the outset I am prepared to admit that some of these men who denied history of disease may nevertheless have had some infection in infancy. Every intelligent boy, however, can usually carry his history beyond the time he can remember, if he is not an orphan. Furthermore, it is doubtful if infections in infancy have as great a bearing on the development of chronic valvular disease as infections that occur in childhood or later in life.

I think it will be granted that the cases of mitral stenosis and aortic insufficiency were caused by definite changes in the valves leading to shortening, thickening and adhesions. With the cases grouped as mitral insufficiency, the same cannot be said. Possibly the cases with hypertrophy were true lesions of the mitral valve. There are, however, so many varieties of systolic murmurs heard at the apex, many of which are not associated with any disease of the valve but are purely functional in type, that the determination of organic or functional cause is often impossible. Nor does it matter much what the character of the murmur is as long as there is no hypertrophy of the left ventricle and there is normal response to exercise with no history of symptoms.

It will be seen from the table that syphilis played little part in the history of the cases of aortic insufficiency. It must be remembered that these men were for the most part young men under 25 years of age. All our experience goes to show that the aortitis of syphilis is a rather late manifestation and usually is found in men after 30, in most cases after 40.

Although there was no history of infections obtained in some of these cases, it is hard to believe that there had not been some present so mild as to have escaped the notice of the victims. We recognize "walking typhoid," pneumonias so mild that the person does not seek advice and scarlet fever so mild that only the subsequent skin desquamation and the outbreak of other cases give us the clue to diagnosis. Have we not here evidence of endocarditis so mild in type that it does not make its presence known, yet the valves are being irreparably damaged? The mildest cases clinically recognized as such are not necessarily the very mildest due to any particular organism. The cases we see of endocarditis are those that have symptoms sufficiently severe to bring the possessor under medical care. We certainly may assume that there are still milder cases in which there are no symptoms.

SUMMARY

The figures presented in the foregoing show that typical physical signs of aortic insufficiency and of mitral stenosis are found in many young men who have never suffered any inconvenience on account of their heart lesion, and who can give no cause for the development of the cardiac lesion.

Possibly such cases are the very mildest cases of acute endocarditis, running a course absolutely symptomless, and found later accidentally only when a supposedly healthy man is examined.

Health of Glasgow Schoolchildren.—The *Glasgow Medical Journal* for July, 1918, gives in abstract some of the findings of the report of Dr. Andrew of the medical inspection of the schoolchildren of Glasgow for the year ending July 31, 1917. It was found that in no instance did the children come up to the standard of height and weight established by the Anthropometric Committee except in the case of the boys of 5 years whose average height was half an inch greater than the anthropometric standard. A considerable proportion were above the average in nutrition, but there were also a considerable number of undernourished children. Only 26.4 per cent. of the boys had sound teeth and 10 per cent. of the girls. Stammering was found to be more frequent among the boys, twenty-six cases being found among them as against eleven among the girls. Thirty-seven per cent. of the children were suffering from some disease or defect other than nits or vermin. Of those with physical defects, in 1909, there were 58 per cent. with rickets as compared with 29.5 in 1917. The proportion of underfed children was less than in the previous year. There was also an improvement with reference to tuberculosis, the percentage being 17.8 for 1909 and only 11.7 for 1917.

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SATURDAY, SEPTEMBER 21, 1918

PHYSICIANS UNDER THE SELECTIVE SERVICE LAW

The Journal has hoped that special regulations would be issued for the guidance of the Selective Service Boards in the placing of physicians. Up to this time no such special regulations have been promulgated and from present indications none will be promulgated. Hence physicians will go through the same procedures as other men. They will receive the questionnaires from their Local Boards, which they must fill out and return. Incidentally, no matter how many other questionnaires a physician may have received, or from what sources other questionnaires may have come, that sent by the local board is the one which he must fill out and return. This questionnaire is quite similar to that used for the registrants under the previous registration. In filling out the questionnaire the physician, as every other registrant, must indicate whether or not he desires deferred classification or exemption. If he waives exemption or deferred classification, the matter so far as he is concerned is settled, although others may intervene before the appeal board and ask exemption or deferred classification for him. It may be confidently expected that the number of physicians asking for deferred classification or exemption will proportionately be much lower than is the case with any other calling or profession.

There are three main grounds on which physicians may request exemption or deferred classification. (1) physical disability, (2) dependency, (3) community need.

(1) Comparatively few active practitioners in medicine will claim exemption on the ground of physical disability.

(2) The question of dependency is covered by Series X of the questionnaire. This is a very extended list of questions, and it is intended to secure accurate information regarding each registrant's financial status. In the past some of the selective service boards in considering this question of dependency have also considered the possibility that a physician might secure a commission and, therefore, a superior position in a financial way over the private. On the other hand, many boards have regarded the physician in exactly the same light as other men.

(3) The important group from the physician's standpoint is that in which exemption is claimed under that portion of the law which warrants exemption of "persons engaged in . . . occupations or employments . . . found to be necessary to the maintenance of the military forces or the maintenance of national interest during the emergency," or in those groups specifically designated as exempt. The Provost Marshal-General has prepared an explanatory memorandum covering this point. According to this memorandum the local boards have authority, subject to the right of appeal to the district boards, to pass on claims of registrants who are engaged in the occupations or employments specifically designated by the law as exempted or entitled to deferred classification. Included in this classification are "medical students, county and municipal officials . . . such persons employed in the service of the United States as the President may designate, . . ." In other words, medical students, physicians holding national, county or municipal positions, of importance to the public health, or physicians employed in the service of the United States, for example, on the local boards, whom the President may designate as entitled to exemption, will be exempted by the local boards by making claim on this ground on the questionnaire and producing the necessary proof that they are so engaged.

The district boards have the authority to pass on claims for exemption on the grounds that any particular occupation or employment is neccesary and whether or not the registrant is necessary therein. No individual, group of individuals or organization can usurp this authority. Only these boards can determine what persons — i. e., what physicians — are engaged in "occupations or employments . . . found to be necessary to the maintenance of the military forces or the maintenance of national interests during the emergency." In order to aid the boards in passing on such claims each district board is authorized to appoint three advisers; one is to be nominated by the Department of Labor, one by the Department of Agriculture and one by the district board itself. The law provides for additional advisers when more are required. These advisers are not members of the board, have no right to vote at any meetings, but have definitely advisory powers only. The regulations state, further, and this is a point which applies particularly to physicians:

"The necessity of not seriously interfering with certain occupations and employments, such as financial, commercial, educational, hospital work, care of the public health, or with the conduct of certain other activities necessary to the public welfare and the prosecution of the war, requires that the District Boards have the cooperation of such advisers so that persons necessary in such activities be not removed there-

from. To this end the adviser nominated by the District Board should bring to the attention of the District Board the questions as to whether or not individuals engaged in some particular industry, occupation, or employment are so necessary thereto as to outweigh the benefit to the Nation should they be drafted into the Army."

This paragraph indicates that the question as to whether a certain physician registrant is needed in a medical college, in a hospital, in civilian practice, in an institution, etc., will be investigated and reported on to the board by the "adviser" nominated by the District Board.

In defining the word "necessary" the boards are instructed that this word implies (1) that the registrant is actually and completely engaged in the occupation and that he is competent and qualified in that capacity; (2) that the removal of the registrant "would result in direct, substantial and material loss and detriment to the effectiveness of the . . . occupation," and (3) "that the available supply of persons competent in the capacity recited in the rule is such that the registrant cannot be replaced in such capacity without direct, substantial material loss and detriment to the effective operation of the industry, occupation or employment." The boards are especially asked to consider (1) the length of time the registrant has been engaged in such capacity, (2) the nature of the claims, study, training or experience and the extent and value of his qualification for the capacity in which he is engaged, and (3) the actual conditions which would result from his removal.

It is obvious that physicians, although not specially considered as a class, have been given special consideration in framing the regulations.

DENTAL BACTERIOLOGY IN RELATION TO DENTAL CARIES

If an attempt is made to bring some order out of the chaos in which the scientific aspects of dental caries seem to be involved, it appears not unlikely that several factors of unlike character are concerned. They have been fancifully represented as "defensive" on the one hand, and "attacking" on the other. Among the latter group, bacteria and carbohydrates probably deserve the foremost attention in the study of the etiology of decay of the teeth. The pioneer studies of Miller on the bacteriology of the mouth gave great weight to his views; hence even today his conception of dental decay still is prominent. Miller's idea was that lactic acid or similar acids produced by bacterial fermentation of the carbohydrates in the mouth are responsible for the decalcification of the enamel, and that the exposed dentin is further destroyed by the proteolytic ferments of the same or similar bacteria. But as Meyer[1] has pointed out in a review of the present status of dental bacteriology, neither Miller nor any of the subsequent investigators has succeeded in finding any organisms strictly specific for caries.

The medical profession has scarcely yet become familiar with the more recent studies of Kligler[2] in this country on the microbiotic flora of the normal mouth and also the changes observed when dental caries occurs. All the families of bacteria are represented in the healthy oral cavity. Most predominant are the representatives of the cocci and streptothrica or trichomycetes group. On the healthy teeth the types of organisms and their relative abundance remain apparently constant, although with the changing conditions in the mouth there is a variation in the total numbers of bacteria. From the available data Meyer has gathered that the number under ordinary conditions in 1 mg. of deposit consists of about twenty-five million organisms, of which one million can be cultivated. In dirty mouths the counts were about twice as high. The growth of oral micro-organisms is just as much influenced by changes in the mouth as is the case for bacterial activity and growth in the soil or in the intestinal tract. The total number of bacteria increases during the night and immediately following a meal. Miller adds that the stagnant conditions in the mouth inducing concentration of fermentable carbohydrates causes a shift in the general relationship of the types to one another, a decrease of the cocci and increase of the forms characteristic for early stages of decay. The number of bacteria on unbrushed teeth were about four times as great as those on brushed teeth. Three times the number of organisms were found in dental deposits immediately after meals, in contrast with that present before meals. Brushing of the teeth or chewing tobacco removes about three fourths of the total number of bacteria.

The first stages of caries which, in the judgment of Kligler, can be considered a specific infection, show enormous counts and an entirely different flora from that of normal teeth. With the progress of decay the character of the dominant micro-organisms changes. As Meyer has summarized it, in comparison with the clean and normal mouth, there is a decrease of the streptococci in all stages of decay and a marked increase in the acidific bacilli. The medium of the mouth is poor in proteins and usually contains carbohydrate; therefore, it is unsuitable for proteolytic organisms. Only in such portions of the buccal cavity, like decayed teeth, where symbiosis with strongly aerobic organisms and cumulation of nitrogenous material produces a suitable soil, can strongly proteolytic anaerobic bacteria exist and develop.

Let it be clearly asserted that the relations of cause and effect are by no means clearly demonstrated in

1. Meyer, K. F.: The Present Status of Dental Bacteriology, Jour. National Dental Assn., 1917, **4**, 966.

2. Kligler, I. J.: Jour. Allied Dental Soc., 1915, **10**, 141, 282, 314.

the bacteriologic studies of decay made up to this time. But if one is justifiable, from such somewhat indefinite findings as are presented, in assuming that oral micro-organisms are in some way or to some degree responsible for dental decay, it is logically in order to attempt to eliminate the causal agents. As Meyer indicates, sterilization by chemical means is impossible; and the use of such procedures may actually be harmful to the tissues of the mouth cavity. There is something both novel and modern in the further suggestion of studies along chemotherapeutic lines leading to the possible discovery of highly parasitotropic and slightly organotropic substances in an attempt to gain mastery over the objectionable micro-organisms. The further existence of possible foci of systemic infection in the mouth cavity opens up still different problems. It seems likely, indeed, that bacteriology and the dental clinic will become more closely related to each other in the immediate future.

MEDICAL HELP IN THE UNDERNUTRITION OF CHILDHOOD—WHAT NEXT?

Some time ago we referred to the investigations of Osborne and Mendel[1] relating to the capacity to grow after prolonged suspension of growth. They found that when animals were stunted by a variety of methods that involved undernutrition or malnutrition, increment in size could be resumed, even after exceptionally long periods of suppression of growth, provided the diet was made suitable. In other words, the capacity to grow was not lost until it was actually exercised in growing. Another striking feature developed in the researches of the New Haven investigators was the surprising rapidity with which the subsequent gains were made after growth had been inhibited for some time. The rate of gain after enforced failure to grow was far beyond what individuals of the same size experience at the usual normal period of growth. That these results are not confined to the domain of experimental observation has been attested by Manny[2] of the New York Association for Improving the Condition of the Poor. Considerable experience, he states, is now available, from well conducted summer camps, all-the-year stations and from other special situations in which conditions of feeding, sleeping, exercises, etc., are carefully supervised, to prove that the growth of the majority of stunted children can be promoted with almost startling rapidity. The weight charts of the boys in truant schools, for instance, show almost perpendicular advances as soon as a chance for normal growth is afforded.

The class method of improving defective nutrition, which was commented on in an earlier issue,[3] has contributed evidence of a similar sort. Of course there are irremediable hereditary curtailments of growth, and children whom no amount of personal or dietary hygiene will convert into normal sized adults; but when once the immense possibilities of good in the nutrition clinics and classes are admitted,[4] the desirability of organizing such agencies and articulating them with other possible factors for the welfare of childhood deserves serious consideration at a time when man power and woman power must be kept at its maximum.

There is a tendency to look on defective nutrition as the problem of the physiologist and physician solely. For its immediate aspects this is probably a proper view. The worker in home economics now brings additional help into the field, adding helpful social agencies to such factors as the school nurses, the physician, the milk stations, and the visiting nurses. But there is a limit to the powers of the food clinic and the dispensary. As Manny has pointed out, all these measures of relief are social makeshifts compared with the immense work of education and economic readjustment that lies ahead. After all, "what is the matter with the poor is their poverty." And, it may be added, what is the matter with the ignorant is their ignorance. As he says, unless we recognize that defective nutrition in childhood must ultimately be treated as only one aspect of poverty and only one aspect of ignorance and shape our social program accordingly, food clinics and the remedial work of social agencies may only increase the number of children reared in families too poor or too neglectful to be safely entrusted with the reproduction of the race.

THE UTILIZATION OF NUTS AS FOOD

The exigencies of war time have emphasized anew those properties of nuts as foods which remove them from the category of luxuries and place them on the list of substantial components of the day's ration. In considering to what extent nuts may actually be regarded as a good dietary investment, it should be remembered that, compared bulk for bulk, they belong among the most nutritive of foods ordinarily available. They differ from the staple cereal seeds used as human foods in their comparative richness in protein and fat; of the commonly available nuts the chestnut alone contains an abundance of carbohydrate, starch, in place of the nutrients just mentioned.

The reputation of nuts as desirable dietary components has suffered from the widespread belief that these foods are particularly difficult of digestion. Pro-

1. Osborne, T. B., and Mendel, L. B.: The Suppression of Growth and the Capacity to Grow, Jour. Biol. Chem., 1914, **18**, 95; The Resumption of Growth After Long Continued Failure to Grow, Jour. Biol. Chem., 1915, **23**, 439; Acceleration of Growth After Retardation, Am. Jour. Physiol., 1916, **40**, 16. Mendel, L. B.: Abnormalities of Growth, Am. Jour. Med. Sc., 1917, **153**, 1.

2. Manny, F. A.: Defective Nutrition and the Standard of Living, Survey, March 20, 1918.

3. The Race for Life in Childhood, editorial, The Journal A. M. A., July 20, 1918, p. 194.

4. Manny, F. A.: Nutrition Clinics and Classes, Mod. Hosp., 1918, **10**, 129.

fessor Jaffa[1] of the University of California, who has furnished some of the best experimentally ascertained facts regarding the utilization of nuts, has remarked that if the true composition of these products were more generally appreciated and their appetizing qualities and food value better understood, they would lose their reputation for being indigestible. This view derives added support from the more recent studies of Cajori[2] at the Yale laboratory of physiologic chemistry. In digestion trials on man with almonds, peanuts, pecan nuts, pine nuts, English walnuts, coconuts, lichi nuts and Brazil nuts the "coefficients of digestibility" for diets including liberal allowances of these components fell essentially within the range of the basal mixed diet of the same persons. In general, says Cajori, the proteins, that is, nitrogenous components, and carbohydrates of the nuts studied were absorbed in large part; and in no case did the quantity of nitrogen or carbohydrate appearing in the feces indicate that these nuts are especially resistant to the digestive functions of the alimentary canal. This conclusion is especially emphasized when the nuts are fed in a finely divided form as nut paste or "butters." Here comminution is artificially obtained in a degree reached only by the most careful mastication.

In view of the growing popularity of so-called nut pastes or nut "butters," it is interesting to note, in Cajori's findings, the difference of digestibility between the peanut, fed as the whole nut and masticated, and peanut butter. The somewhat more favorable outcome with the latter suggests that the texture of the nut product finding its way into the stomach may not be without effect on the digestibility.

According to Cajori, it is doubtful whether cooking causes any marked change in the digestibility of protein-rich nuts. The raw almond appeared to be as completely utilized as the thoroughly steamed nut. In the case of the chestnut, with its abundance of starch, such culinary treatment is essential, as it is in the case of the somewhat comparable potato.

We have already directed attention to Hoobler's[3] assertion that nut proteins may be the equal of animal proteins and superior to others of vegetable origin as components suitable for the elaboration of milk in the diets of lactating mothers. Cajori's studies lead him to the conclusion that if nuts are eaten properly and used in the diet as are eggs, meats and other foods rich in protein, they have "a physiological value on a par with that of more common staple articles of the diet." In harmony with this is the conclusion of the latest pronouncement of the experts of the U. S. Food Administration,[4] pointing out that nuts should be counted as part of the necessary food and not eaten as an extra. We are led to believe that "the occasional indigestion following injudicious eating of cheese and nuts is probably often due to forgetting that they are very substantial foods and eating them at the end of an already sufficient meal."

There are abundant indications that nuts which have long found a valued place in the dietary of the diabetic without detriment to his health will grow in popularity as foods for the well. The acreage of peanuts—legumes usually classed with nuts and forming the most valuable nut crop of the United States—increased 60 per cent. last year. A few years ago the importations of other nuts had already approached 100,000,000 pounds a year. This speaks promisingly for the progress of these meat substitutes.

1. Jaffa, M. E.: Bulls. 107 (1901); 132 (1903); 332 (1910), Office of Expt. Sta., U. S. Dept. Agr.
2. Cajori, F. A. The Utilization of Some Nuts as Food, Jour. Home Economics, 1918, **10**, 304.
3. Hoobler, B. R.: Problems Connected with the Collection and Production of Human Milk, THE JOURNAL A. M. A., Aug. 11, 1917, p. 421.
4. Food Guide for War Service at Home, Prepared under the Direction of the U. S. Food Administration, New York, Charles Scribner's Sons, 1918.

A THEORY OF PERISTALSIS

What is the explanation of the orderly progress of the food residues along the alimentary tract? It is evidently dependent on a well regulated mechanism that provides for a downward movement from the stomach to the colon. According to the "law of the intestine" that is currently taught, a stimulus, such as is represented by the presence of a bolus of food, applied to any part of the intestine normally provokes a contraction above and a relaxation below the place of application. The result of this is a forward movement by propulsion of the food mass.

The phenomenon just outlined appears to be associated with a suitable reflex—the myenteric reflex, as it has been termed—which forms the basis for the control and proper sequence of the progressive peristalsis. A difficulty in accepting such an interpretation has arisen, however, because of the apparent lack of any nervous arc over which the regulatory impulses could travel. Furthermore, to quote a recent critic, if the reflex were always active the bowel would soon be emptied. Food once introduced into the duodenum would never stop in its rush to the anus. These and other considerations involving the insufficiency of the "law of the intestine" as an explanation of the peculiarities of intestinal activity have led Alvarez of the University of California Medical School to emphasize the unlike irritability of different parts of the small intestine as a possible explanation of the "downward progress" of food. He is convinced from extensive comparative studies of the irritability, tone, latent period, susceptibility to trauma and toxins, reactions to drugs, etc., of segments from different parts of the intestine that in the different regions there exist different muscles suited to different functions. In the latest researches,[1] not only gradients of irritability and rhythmicity but measurable differences in metabolism

1. Alvarez, W. C., and Starkweather, Esther: XI, The Metabolic Gradient Underlying Intestinal Peristalsis, Am. Jour. Physiol., 1918, **46**, 186.

have been demonstrated in the intestinal muscle from the duodenum to the colon. These gradients are believed by Alvarez and Starkweather to determine the direction of peristalsis. Thus, they say, the feces could not lie quietly in the cecum or colon if the muscles there were as active and as responsive to stimuli as they are in the duodenum.

Whether this novel hypothesis will gain adherents remains to be seen. Accelerated metabolism may be the expression of greater activity in a muscle—an accompaniment rather than a forerunner or cause of it. The crux of the matter, in any event, is that the duodenum shows greater metabolism and greater activity, even in the form of isolated strips free from reflex nervous impulses, than do the succeeding portions of the bowel. It is not difficult to believe that changes in the "gradient of metabolism" affecting the performance of the intestine in certain localities might give rise to symptoms of disorder.[2] More facts are needed, however, to substantiate the theory.

Current Comment

THE CHEMISTRY OF THE PLACENTA

Tissue analysis has not as a rule yielded to the physiologic chemist that reward of significant information which such painstaking and somewhat arduous work deserves. Several reasons may readily be advanced to explain this. The methods for differentiating the various types of tissue components with quantitative accuracy are still far from satisfactory. Furthermore, wherever groups of cells are organized into larger structures, the fundamental components of cellular protoplasm will be found present in sufficient amount to overshadow, so to speak, incidental more specific constituents of the living matter and thus render their detection or exact determination more difficult. Finally, most tissues are so permeated with blood vessels and lymph spaces as to introduce extraneous fluids in sufficient amounts to complicate the analytic problem. In illustration of these comments we may refer to analyses of various human organs as published some time ago by Drummond[3] of the Cancer Hospital Research Laboratory in London. Without mentioning details, it will suffice to note that the data represent the distribution of nitrogen in the various familiar types of derivatives of that element which make up the tissues. A comparison of the figures for the breast, liver, pancreas, spleen, kidney and both plain and striated muscle shows a surprising uniformity, giving no basis for the formulation of hypotheses respecting the avowedly unlike functions of such unlike body structures. In contrast with these findings, Harding and Fort[4] of McGill University have reported a series of comparable analyses of mature human placentas which seem to show a high yield of the diamino-acid arginin as a distinguishing feature of the placenta protein. The figures speak for double the content of this compound yielded by other human organs. Arginin has been asserted to have some relation to the formation of creatin and creatinin; and it has also been assigned a rôle in the synthesis of purin compounds and thus of new nuclear material. However suggestive this may be to the student of fetal growth, it is still too vague, and the experimental records are still too uncertain or contradictory of other findings to serve as the basis of more than interesting speculation. If we cite the Canadian biochemists' conclusion that, corresponding to the difference in arginin yield, there must be ascribed to the placenta a function differing from that of other organs, the vagueness does not vanish. When the further assertion is quoted, namely, that the placenta from a chemical standpoint cannot be regarded entirely as a passive organ, we reiterate a belief that has been voiced before, though on the basis of different evidence.

2. Alvarez, W. C.: The Syndrome of Mild Reverse Peristalsis, The Journal A. M. A., Dec. 15, 1917, p. 2018.
3. Drummond, J. C.: Biochem. Jour., 1916, **10**, 473.
4. Harding, V. J., and Fort, C. A.: The Amino-Acids of Mature Placenta, Jour. Biol. Chem., 1918, **35**, 29.

THE NEED FOR VOLUNTEERS

Thus far the medical profession has shown a splendid spirit of patriotism and self-sacrifice in volunteering for service in the Medical Department of the Army. The time for volunteering is not over. The new conscription act raising the age limit to include those under 46 does not end the call for volunteers. Further, it is now announced that the first call will include only those up to 36 years of age. So far as physicians are concerned, therefore, this will include only 4 years—32 to 35 inclusive. This will not supply a large number of medical officers—not sufficient to meet the demands that will soon be made on the Surgeon-General for medical officers. And even though the first draft included all up to 46, there would still be room for the volunteer. We are prompted to emphasize this point because of letters that have been received from physicians over 46 years of age who evidently are under the impression that there will be no opportunity now for them to offer their services; also because there is an immediate need for volunteers. Preparations are being made for a big army. This army may be so large as to require 40,000 physicians. In fact, the call for volunteers is almost as urgent today as it has been at any time since the war started. It might be well here to emphasize that under the new conscription law physicians will have practically the same status as they had under the former law: many who neglected to apply for commissions were inducted into the army as privates. In some instances they served as privates for a considerable period of time on account of the procedure involved in applying for and in issuing the commission.

The War and Physical Deterioration.—In a war of attrition such as this, physical deterioration of the masses of society in consequence of inadequate nourishment results in a serious decline in national morale; and this is a decisive factor in the outcome of the struggle. Food and other physical necessities will win the war. We must therefore not only conserve food and other necessities, but, more important, we must insure ample production of them through a lessening of the production of nonessentials.—H. G. Moulton, *Economist.*

Medical Mobilization and the War

Relation of Volunteer Medical Service Corps to Members of Draft Boards and Other Physicians Registered Under Selective Service Act

The following is a telegram, dated September 17, from the Provost Marshal-General:

Membership in Volunteer Medical Service Corps is not service in the military establishment and does not therefore affect in any way the status of registrants before the Selective Service Boards. This statement cannot be made too emphatic. It is unfortunate that any impression has arisen to the contrary.

This matter is of particular importance to medical members of draft boards. Such members of draft boards may not continue to serve thereon after being commissioned in the Medical Corps of the Army or Navy. In view of the enormous labor involved in the physical examination of millions of men in the next few months, the Provost Marshal-General's Office feels very strongly that its needs are vital during the period covered by these examinations, and that it must retain the services of medical members of demonstrated efficiency. It has, therefore, requested the cooperation of the Surgeon-Generals of the Army and Navy and each one of these heads is cooperating by discontinuing for the present the commissioning of medical members of the draft boards in their respective arms of the service. The Surgeon-General of the Public Health Service is cooperating in a similar way. But no question of eligibility to continue to serve as a medical member of the draft boards arises in connection with membership in the Volunteer Medical Service Corps, and resignations of physicians on Selective Service Boards will not be accepted when based on membership in Volunteer Medical Service Corps. Instructions to this effect are going out today to all draft executives.

CROWDER.

For the Promotion of Medical Officers

Secretary Daniels of the Navy has appointed a board to recommend medical officers for promotion. The members of the board are: Rear Admiral Cary T. Grayson, U. S. Navy, president; Rear Admiral E. R. Stitt, U. S. Navy; Rear Admiral G. H. Basher, U. S. Navy; Capt. A. M. D. McCormick, U. S. Navy; Capt. L. W. Sprayling, U. S. Navy; and Lieut. A. C. Stanley, U. S. Navy, Ret., recorder. Two officers are to be recommended to the temporary rank of rear admiral, 7 to the permanent rank of captain, 15 to temporary captain and 41 to temporary commander. Promotion will depend on fitness. The board is to arrive at its conclusions as to which officers are best fitted for advancement without regard to the place such officers at present occupy on the list. Seniority among officers in the same rank relates to their comparative precedence, and has no bearing on their right to advancement.

War Department Permits Student Nurses to Render Army Service in France

In compliance with the wishes of the Medical Department in France, the fifty American hospitals which organized base hospital units for service overseas are to be permitted by the War Department to send a limited number of student nurses to France where they may both render service and complete their training under representatives of their own schools in base hospitals abroad. However, the War Department does not wish to interfere with the work of hospitals in this country and will leave the decision as to the adoption of the plan to the hospital authorities. Most of the pupils selected will be seniors and will be enrolled in the Army School of Nursing. After taking the oath they will be placed on duty under the nursing staff of their own base hospital overseas, each unit of twenty-five being in charge of a graduate nurse acceptable to the schools sending the students and to the Surgeon-General. The plan of using student nurses at the base hospitals in this country has resulted in response from more than 1,000 applicants who have been assigned to base hospitals at camps or who are awaiting assignment, and who after a year of training in this country will be eligible for assignment in American hospitals abroad. These students will receive an opportunity to learn branches of nursing not taught in Army hospitals by spending a certain period in a civilian hospital, under a system of exchange to be worked out with civilian hospitals. This system will also make the civilian nurse eligible for the Army Nurse Corps after her graduation.

Women not eligible for admission to the Army School of Nursing or to civil hospitals may become "hospital assistants," being assigned to convalescent hospitals in this country where training units are to be established. Those not having completed the Red Cross courses in elementary nursing and hygiene, first aid to the injured and dietetics, will be required to take a similar course extending over a period of at least six weeks. The qualifications for admission are: married women between the ages of 21 and 40 whose husbands are overseas and who are free to give their service, and single women between 35 and 45. Candidates must have a high school education or its equivalent. Application should be made to the Division of Hospital Assistants of the Army School of Nursing through the division directors of the Bureau of Nursing of the American Red Cross, to the Army School of Nursing, Surgeon-General's Office, Washington, D. C.

COMMISSIONS ACCEPTED, MEDICAL CORPS, U. S. ARMY

Previous lists published in THE JOURNAL, June 1, 22 and 29, July 13, 20 and 27, August 3, 10, 17, 24 and 31, September 7 and 14.

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McJunkin, F. A.

CORRECTION

In the issue of July 6 under the heading "Orders to Officers of the Medical Reserve Corps" appears the announcement of the resignation of Lieut. CHARLES H. BAILEY, of East Liverpool, O. An error was made in the transmission of this order since Dr. Charles H. Bailey is now a captain in the Medical Reserve Corps and is on duty overseas.

COMMISSIONS OFFERED AND ORDERS TO DUTY ON ACCEPTANCE

Alabama

To Camp Beauregard, La., base hospital, Capt. S. G. GAY, Selma.

To Camp Lee, Va., Lieuts. J. R. CHANDLER, Ishkooda; J. D. ATKINS, Mobile.

To Camp Sheridan, Ala., Capts. A. H. OWENS, Ashland; J. S. GAY, Delta; Lieuts. L. A. COLEMAN, Abbeville; C. H. CLEVELAND, Anniston; J. S. HARMON, Elmore.

To Fort Oglethorpe for instruction, Major C. T. POLLARD, Montgomery; Capt. J. H. ASHCRAFT, Fayette; Lieuts. J. A. MILLER, Birmingham; G. B. COLLIER, Tuskegee.

To Montgomery, Ala., Lieut. D. H. THROATT, McFall.

Arkansas

To Camp Sheridan, Ala., Capt. J. C. WILKINS, Hot Springs; Lieuts. R. MARTIN, Warren; M. C. CRANDALL, Wilmot.

To Fort Oglethorpe for instruction, Capts. I. N. McCOLLUM, Conway, W. D. JUDKINS, Little Rock; B. H. HAWKINS, Mena; Lieuts. J. H. NEAL, E. M. THOMPSON, Fort Smith; G. L. HENDERSON, Greenbrier; J. T. MATTHEWS, Heber Springs; G. L. WILSON, Hermitage; J. H. STIDHAM, Hoxie; E. D. WALL, Marianna.

To Fort Riley for instruction, Lieuts. S. E. SMITH, Banks; J. L. BAIRD, G. E. PAULLUS, Marked Tree.

California

To Camp Fremont, Calif., base hospital, Capts. F. C. GERLACH, A. S. J. SMITH, San Jose.

To Camp Kearney, Calif., as assistant to the camp surgeon, C. F. METCALF, South Pasadena. Base hospital, Capts. M. P. BURNHAM, Burlingame; W. H. GILBERT, H. B. TEBBETTS, Los Angeles; G. T. POMEROY, Oakland; H. SPIRO, San Francisco; F. D. WALSH, Susanville; Lieuts. F. K. POMEROY, Fresno; D. H. RANSOM, Madera.

To Fort MacArthur, Calif., as tuberculosis examiner, Capt. C. C. BROWNING, South Pasadena.

To Fort Oglethorpe for instruction, Capts. T. S. COLLINS, A. H. JONES, Los Angeles; F. H. THIBODO, Placentia; C. E. HABLUTZEL, San Jose; Lieuts. W. H. WIMP, Haltville; R. A. SANDS, Venice.

To Fort Riley for instruction, Capts. J. H. TITUS, Ontario; V. D. BROWN, San Francisco; Lieuts. C. L. TERRILL, Farmington; W. ALBERT, B. M. FREES, Los Angeles; W. L. YAGER, Ludlow; H. J. DAVIS, Sacramento.

To San Francisco, Calif., Letterman General Hospital, Capts. E. M. PALLETTE, Los Angeles; C. A. BELL, Santa Barbara.

Colorado

To Fort Oglethorpe for instruction, Capts. C. J. LATTS, Haxtum; P. L. LEYDA, Lafayette; J. R. McCRACKEN, Nederland.

To Fort Riley for instruction, Lieut. J. G. STEWART, Grover.

Connecticut

To Fort Oglethorpe for instruction, Lieuts. W. J. H. FISCHER, Milford; R. W. LOWE, Ridgefield.

District of Columbia

To Fort Oglethorpe for instruction, Capts. E. BARRY, W. T. H. PALLISTER, Lieut. F. T. CHAMBERLIN, Jr., Washington.

To Washington, D. C., Lieut. C. F. X. LEIBELL, Washington.

Florida

To Camp McClellan, Ala., Lieut. M. R. MARKEY, Bronson.

To Fort Oglethorpe for instruction, Lieut. E. D. FRENCH, Jacksonville.

Georgia

To Camp Lee, Va., Lieuts. G. F. CHAMBERS, I. C. EVANS, Columbus.

To Camp Sheridan, Ala., Lieuts. W. B. HELLER, Lavonia; E. L. STURKEY, Lincolnton.

To Fort Oglethorpe for instruction, Capts. C. B. WALLING, Collins; J. R. YOUMANS, Columbus; S. M. WITHERS, Moultrie.

To Hoboken, N. J., Lieut. G. W. BAGLEY, DeSoto.

Idaho

To New York, Neurological Institute, for instruction, Capt. J. L. S. STEWART, Boise.

Illinois

To Camp Custer, Mich., Capts. C. P. HORNER, G. T. SMITH, S. WICKS, I. ZABOKRTSKY, Chicago; D. L. HEDBERG, Lee; C. S. AMBROSE, Waukegan; Lieuts. H. J. HALVORSEN, H. P. MARTIN, H. W. MARTIN, Chicago; J. R. HIGGINS, Gillespie.

To Camp Grant, Ill., Capts. J. H. MURPHY, Geneseo; H. E. MONROE, Shelbyville; Lieut. R. E. MILTENBERGER, Spring Valley. *To examine the command* for nervous and mental diseases, Lieut. R. H. STENGER, Kankakee.

To Camp Shelby, Miss., base hospital, Lieut. H. R. BASINGER, Chicago.

To Fort Oglethorpe for instruction, Capts. C. A. ALBRECHT, L. A. BEATON, H. L. KRETSCHMER, J. B. STACKABLE, W. B. WHITAKER, Chicago; H. D. HULL, Crystal Lake; C. B. RIPLEY, Galesburg; R. L. TRUITT, Naperville; G. H. AYLING, St. Anne; F. L. GOURLEY, Waukegan; Lieuts. H. W. BRANN, Centralia; L. P. PIPER, Chicago; J. A. BOZARTH, East St. Louis; T. W. ROBERTS, Joppa; E. J. BURKE, LaSalle; J. L. TOMBAUGH, Odell; J. B. ROE, Oregon; J. B. WICKENSIMER, Steger.

To Fort Riley for instruction, Capt. F. H. MARTIN, Libertyville.

To Hoboken, N. J., Lieut. H. D. LUSE, Chicago.

To New Haven, Conn., Capts. H. J. CORPER, Chicago; E. MORRIS, Oak Forest.

Indiana

To Ann Arbor, Mich., State Psychopathic Hospital, for instruction, Capt. C. C. FUNK, New Albany.

To Camp Custer, Mich., Capts. M. A. AUSTIN, Anderson; T. M. STALEY, Bicknell; Lieuts. L. F. BILLS, Atlanta; E. G. BOUNELL, Hillsboro; F. E. JACKSON, Indianapolis; R. D. ARFORD, Middletown; H. W. MARKLEY, Redkey; C. S. CARMICHAEL, Seelyville; N. A. JAMES, Tell City; H. D. McCORMICK, Vincennes; E. A. SPOHN, Walton.

To Camp Grant, Ill., N. L. HELLER, Dunkirk.

To Camp Lee, Va., Lieuts. P. ARMSTRONG, Gilman; D. W. BELL, Otwell; E. R. GIBBS, Wilkinson.

To Camp McClellan, Ala., base hospital, Capt. H. A. VAN OSDOL, Indianapolis.

To Camp Sheridan, Ala., Capt. H. L. MILLER, West Baden.

To Camp Sherman, Ohio, Capt. A. W. SCHREIBER, LaFayette; Lieuts. G. F. GREENLEAF, Hammond; C. S. BRYAN, Vincennes; G. B. DeTAR, Winslow.

To Fort Oglethorpe for instruction, Capts. J. A. RAWLEY, Brazil; E. M. HOOVER, Elkhart; H. H. WHEELER, Sr., Indianapolis; M. N. THAYER, Linton; C. H. McCULLY, Logansport; W. J. MOLLOY, Muncie; Lieuts. F. G. KELLER, Alexandria; H. L. CUNNINGHAM, Ashley; O. A. DELONG, Azalia; E. E. SCHRIEFER, Cannelton; F. STACKHOUSE, Cates; D. S. STRONG, Dana; B. D. LUNG, Kokomo; J. H. HARE, Logansport; H. E. STEINMAN, Monroeville; E. E. HEATH, Napoleon; J. L. WILSON, South Bend; E. T. EDWARDS, Vincennes; C. A. ROARK, Waynestown.

To Fort Riley for instruction, Capts. W. R. DAVIDSON, Evansville; W. V. STANFIELD, New Town; Lieuts. N. STERN, Indianapolis; O. H. McDONALD, London; C. B. PAYNTER, Salem.

Iowa

To Camp Custer, Mich., Capts. E. F. TALBOTT, Grinnell; W. K. LONG, Hampton; Lieuts. J. E. BAKER, Maynard; G. H. BOETEL, Rock Rapids.

To Camp Dodge, Iowa, Lieut. H. F. MASSON, Washington. Base hospital, Capt. A. H. BLOCKLINGER, Dubuque; Lieut. L. E. HOOPER, Beech.

To Fort Oglethorpe for instruction, Capts. H. D. MERENESS, Dolliver; M. J. MOES, Lieuts. O. A. BROWNSON, Dubuque; H. H. HAGEDORN, Sioux City; E. D. MILLER, Wellman.

To Fort Riley for instruction, Capts. S. A. HUBER, Charter Oak; C. B. ROGERS, Earlville; Lieut. F. P. WINKLER, Sibley.

To Fort Sam Houston, Texas, base hospital, Lieut. C. H. LAUDER, Grinnell.

Kansas

To Camp MacArthur, Texas, Capt. F. F. NETHERTON, Wellington.

To Fort Des Moines, Iowa, Capts. J. T. FAULKNER, Lansing; C. E. ROSS, Wichita.

To Fort Oglethorpe for instruction, Capt. C. S. THIMBLE, Emporia; Lieut. C. B. BAILEY, Hawkinsville.

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Kentucky

To Camp Lee, Va., Lieuts. G. L. DYER, Buechel; B. G. GRIBBLE, Louisville.

To Camp Sheridan, Ala., Lieut. J. S. GILBERT, Lancaster.

To Camp Zachary Taylor, Ky., Capt. A. P. MUELLER, Louisville.

To Fort Oglethorpe for instruction, Capts. W. F. ALVEY, Elizabethtown; C. C. DEWITT, Louisville; H. R. MILTON, Wickliffe; Lieuts. C. W. KELLY, Jr., F. C. THUM, Louisville.

Louisiana

To Camp MacArthur, Texas, Lieut. R. L. ARMSTRONG, Pleasant Hill.

To Fort Oglethorpe for instruction, Capt. E. HOLLOWAY, Plaquemine; Lieuts. L. D. LAFARGUE, Effie; M. WOLF, New Orleans.

Maine

To Fort Oglethorpe for instruction, Capt. W. B. MOULTON, Portland; Lieuts. O. C. MOULTON, South Windham; N. BISSON, Waterville.

To Hoboken, N. J., Lieut. L. W. CARPENTER, Limerick.

Maryland

To Camp Lee, Va., Lieut. H. A. CANTWELL, North East.

To Fort Oglethorpe for instruction, Capt. W. H. HOPKINS, J. O. PURVIS, Annapolis; H. M. LANKFORD, Princess Anna; Lieuts. S. R. WANTZ, E. M. WHEELER, Baltimore; C. T. FISHER, Princess Anne; S. N. PILCHARD, Salisbury; F. E. SHIPLEY, Savage.

To Hoboken, N. J., Lieut. C. S. CROOK, Baltimore.

Massachusetts

To Camp Devens, Mass., as assistant to the camp surgeon, Capt. H. V. W. BOYD, Springfield. Base hospital, Capts. F. C. HILLSON, West Roxbury; J. W. CAHILL, Worcester. *To examine the command* for nervous and mental diseases, Capt. A. W. FAIRBANKS, Boston.

To Camp Meade, Md., base hospital, Capt. G. E. EMERY, Worcester; Lieut. H. H. FLAGG, Boston.

To Fort Oglethorpe for instruction, Capts. E. FLAGG, Boston; J. J. McNAMARA, Brockton; C. C. BURPOE, Malden; L. J. MASKELL, Newton; H. C. CHENEY, Palmer; R. S. BENNER, R. B. OBER, Springfield; A. L. NEWHALL, West Lynn; F. J. HANLEY, Whitman; Lieuts. A. J. J. SULLIVAN, Fall River; F. H. LALLY, Milford; C. G. YERBURY, Springfield; G. L. STEELE, West Springfield; C. B. KENNEY, Wichendon.

To Hoboken, N. J., Capt. R. T. STEARNS, Boston; Lieuts. D. J. HERLIHY, Cambridge; W. S. LYON, Fall River; R. A. TAYLOR, Waltham.

Michigan

To Camp Custer, Mich., Lieut. C. A. VAN DUSEN, Ogden Center.

To Camp Dix, N. J., base hospital, Lieut. R. L. COWEN, Detroit.

To Camp Dodge, Iowa, base hospital, Lieut. J. M. SUTHERLAND, Detroit.

To Camp Grant, Ill., Lieut. G. D. BRIGGS, Flint.

To Camp Sherman, Ohio, Lieuts. M. SACHNOVITZ, Detroit; I. W. GREENE, Richmond.

To Fort Oglethorpe for instruction, Capts. H. M. JOY, Calumet; E. M. CURRIE, G. P. MYERS, Detroit; I. W. ORR, Flint; H. W. DINGMAN, Grand Rapids; Lieuts. F. DWYER, A. C. HALL, G. H. HEALY, C. J. JENTGEN, Detroit; C. E. BOONE, Holland.

Minnesota

To Camp Custer, Mich., Lieuts. C. F. HOLST, Little Falls; R. C. RADABAUGH, Mazeppa.

To Fort Oglethorpe for instruction, Capts. A. E. BOOTH, Minneapolis; C. F. McNEVIN, L. A. NELSON, St. Paul; Lieut. F. A. OLSON, Minneapolis.

To Fort Riley, Lieut. A. R. ANDERSON, Barnum.

To New Haven, Conn., Lieut. L. G. GUYER, Waseca.

Mississippi

To Camp MacArthur, Texas, Lieut. J. M. GOLDEN, Lena.

To Camp Sheridan, Ala., Lieut. J. P. WHITE, Mount Olive.

To Fort Oglethorpe for instruction, Capts. J. B. STONE, Belen; E. R. McLEAN, Cleveland; T. H. SEAY, Laurel; Lieut. P. B. RUSSELL, Lena.

Missouri

To Camp Custer, Mich., Capts. S. V. BEDFORD, Jefferson City; C. F. WRIGHT, St. Louis.

To Camp Dodge, Iowa, Lieuts. J. D. TUNNELL, Reger; L. G. McKELLOPS, St. Louis.

To Camp MacArthur, Texas, Lieut. E. N. FRAKES, Harrisburg.

To Fort Oglethorpe for instruction, Capts. C. H. VAN RAVENSWAAY, Boonville; J. T. HICKERSON, Centralia; W. T. BISHOP, Hughsville; L. B. GREENE, Kansas City; B. T. QUIGLEY, Mound City; W. M. WHEELER, Sedalia; H. B. GETTYS, J. H. HUMPHREY, St. Louis; Lieuts. S. H. O. STRATTON, Lincoln; C. S. STRATTON, Roscoe; H. S. CONRAD, St. Joseph; F. E. CHASE, W. H. REIM, St. Louis.

To Fort Riley for instruction, Lieuts. L. E. MONROE, Bonne Terre; J. C. CALDWELL, LaClede; D. C. PERRY, Mound City.

To New Haven, Conn., for instruction, Lieut. W. CAMPBELL, Kansas City.

Montana

To Camp Grant, Ill., base hospital, Lieut. G. F. TURMAN, Missoula.

To Fort Oglethorpe for instruction, Capts. O. T. STRATTON, Cascade; J. H. DRAKE, Hardin; Lieut. J. T. HOLMES, Polson.

To Fort Riley for instruction, Lieuts. J. M. GRAYBEAL, Belgrade; C. L. SMITH, Simms.

Nebraska

To Camp Pike, Ark., base hospital, Capt. F. W. LAKE, Omaha.

To Fort Oglethorpe for instruction, Lieuts. R. W. FOUTS, Dawson; C. N. COE, Wakefield.

To Fort Riley for instruction, Capts. B. M. DEARDORF, Clatonia; C. K. GIBBONS, Kearney; C. L. FAHNESTOCK, McCook; F. P. REED, Weeping Water; Lieuts. J. M. McNALLY, Bellwood; G. E. PETERS, Bloomfield; H. D. LURVEY, Omaha; J. M. STOOPS, Scottsbluff.

New Hampshire

To Fort Oglethorpe for instruction, Capt. W. P. CRAIG, Walpole; Lieut. P. R. HOYT, Laconia.

To Hoboken, N. J., Lieut. E. R. B. McGEE, Berlin.

New Jersey

To Camp Dix, N. J., base hospital, Capt. D. B. STREETT, Jersey City.

To Camp Lee, Va., Lieuts. T. R. ADAMS, Califon; C. A. BIRDSALL, Jersey City.

To Fort Oglethorpe for instruction, Capt. J. S. DOUGLASS, Cape May; Lieuts. C. B. KELLEY, Jersey City; M. E. STREEN, Newark; J. I. LEVY, Ocean Gate; H. N. WAIT, Roselle Park.

To Hoboken, N. J., Lieut. T. M. BRENNOCK, Jersey City.

New Mexico

To Fort Oglethorpe for instruction, Lieut. M. McCAHILL, Albuquerque.

To Fort Riley for instruction, Lieut. L. A. THOMPSON, Springer.

New York

To Camp Hancock, Ga., base hospital, Capt. H. G. DUNHAM, New York.

To Camp Lee, Va., Capts. W. F. FOWLER, Rochester; J. D. GEORGE, Verona; Lieuts. D. G. COOPER, Albion; S. BAUM, New York.

To Camp Meade, Md., base hospital, Capts. B. W. MABEN, Kingston; W. S. MILLS, New York.

To Camp Zachary Taylor, Ky., Lieuts. J. BIER, J. A. HYAMS, New York.

To Fort Oglethorpe for instruction, Major V. C. PEDERSEN, New York; Capts. V. M. RICE, Batavia; H. V. HOLCOMB, Bellmore; J. LONG, J. E. THOMPSON, Brooklyn; J. A. CONWAY, Hornell; L. F. CLELAND, Libbon; C. E. ELKINS, Massena; J. G. HOWARD, Ozone Park; A. S. ARMSTRONG, B. H. CAPLES, J. B. HADEN, P. W. ROBERTS, A. S. TENNER, New York; J. R. BROWNELL, Perry; F. J. FULLER, Potsdam; F. C. REED, Schenectady; J. A. AMES, West Henrietta; Lieuts. H. A. VOGEL, Albany; C. A. HARGITT, B. NEWMAN, Brooklyn; W. G. MILLER, Freeport; E. W. PRESLEY, Great Kills; I. F. LARKIN, Kingston; T. SMITH, Newburgh; M. R. BOOKMAN, T. HALPERN, C. H. HOWELL, R. I. KAHN, A. O. NICHOLSON, E. M. SCHWARTZ; H. L. SLOAN, L. STEINBACH, New York; J. F. BROWNE, Rochester; H. C. MONTGOMERY, Watertown.

To Hoboken, N. J., Capts. E. W. BANTA, M. ROSENFELD, New York; Lieuts. S. D. PIQUET, Brooklyn; S. H. LEVY, Buffalo; H. C. HOFF, New York.

To Lakewood, N. J., Lieut. A. T. MAYS, Brooklyn.

To New Haven, Conn., Lieut. M. GREENWALD, New York. Yale Army Laboratory School, for instruction, Capt. C. W. FIELD, New York.

To New York, Neurological Institute, Lieut. W. C. PORTER, Poughkeepsie.

To Plattsburg Barracks, N. Y., Lieut. M. E. COSTELLO, Branchport.

To Washington, D. C., Surgeon-General's Office, Major G. R. BUTLER, Brooklyn.

North Carolina

To Camp Lee, Va., Lieut. J. D. MAYNARD, Wadesboro.

To Camp Sheridan, Ala., Capts. J. F. MILLER, Ashboro; H. C. MENZIES, Hickory.

To Fort Oglethorpe for instruction, Capt. C. P. BOOLES, Wilmington; Lieuts. R. W. S. PEGRAM, Canton; T. W. CARMICHAEL, Rowland.

To Hoboken, N. J., Lieut. L. H. SWINDELL, Swan Quarter.

North Dakota

To Hoboken, N. J., Capt. T. P. MARTIN, Mayville.

Ohio

To Camp Custer, Mich., Lieuts. M. L. BATTLES, Norwalk; O. D. TATJE, Portsmouth.

To Camp Grant, Ill., Lieuts. C. H. HEFFRON, Metamora; S. B. HAYS, Newcomerstown.

To Camp Jackson, S. C., base hospital, Capt. M. MILLIKIN, Hamilton.

To Camp Kearney, Calif., Lieut. C. S. AMIDON, Cincinnati. Base hospital, Lieut. E. W. GARRETT, Cleveland.

To Camp Lee, Va., Lieut. G. W. CLARK, Maumee.

To Camp Sherman, Ohio, Capt. H. C. LISLE, Springfield; Lieuts. A. W. HOLMAN, Circleville; E. E. FURNAS, Englewood; C. I. KUNTZ, Fremont; A. A. BRINDLEY, Port Clinton; W. H. HARTUNG, Toledo; W. F. SEALOVER, Zanesville.

To Fort Oglethorpe for instruction, Capts. F. B. LIVERMORE, Barberton; B. C. WILLIS, Cincinnati; E. R. BONDY, W. E. GERNHARD, I. E. SEWARD, Cleveland; C. W. GINN, G. H. WELLBROCK, Dayton; E. O. BAUER, Middletown; J. P. DEWITT, New Canton; C. H. HARRIS, New Paris; E. W. FISHER, Portage; R. L. JOHNSON, Wadsworth; W. W. RYALL, Youngstown; Lieuts. D. W. FELLERS, Bloomville; D. A. PERRIN, Chillicothe; T. HULICK, Cincinnati; G. S. DUNBAR, J. R. THOMPSON, Cleveland; C. B. TANNER,

Columbus; J. I. NISBET, Eaton; F. R. TROUT, Jamestown; H. SILVER, Middletown; J. C. FOUNTAIN, Somerset; E. MILLER, Springfield; R. B. LEISTER, Tiffin; J. R. DAVIS, D. KAHN, Toledo; L. E. PHIPPS, Youngstown.

To Hoboken, N. J., Lieuts. E. W. SCHLEMMER, Cincinnati; L. O. SAUR, Norwood.

To New York, Neurological Institute, for instruction, Capt. M. E. BLAHD, Cleveland.

Oklahoma

To Camp Lee, Va., Lieut. J. M. ELLIS, Wapanucka.

To Camp MacArthur, Texas, Lieut. J. DAVIS, Garland.

To Camp Sheridan, Ala., Capts. S. J. FRYER, Muskogee; T. C. BURNS, Oklahoma; Lieuts. J. H. KAY, Durant; R. WOLFE, Hugo.

To Cleveland, Ohio, Lakeside Laboratory, Lieut. M. P. SPRINGER, Tulsa.

To Fort Oglethorpe for instruction, Capt. J. M. GORDON, Weatherford; Lieut. S. E. GAYMAN, Tryon.

To Fort Riley for instruction, Capt. K. L. COLLEY, Bigheart; Lieuts. W. P. RUDELL, Altus; J. A. NELSON, Centrahoma; A. W. NUNNERY, Granite; W. A. THOMPSON, Kusa.

Oregon

To Fort Riley for instruction, Lieut. H. H. HUGHES, Gresham.

Pennsylvania

To Camp Hancock, Ga., base hospital, Lieut. T. G. AIKEN, Berwyn.

To Camp Sevier, S. C., base hospital, Lieut. G. B. DUNKLE, Washington.

To Camp Sheridan, Ala., base hospital, Capt. R. F. RIDPATH, Philadelphia.

To Fort Oglethorpe for instruction, Major T. B. CARROLL, Pittsburgh; Capts. J. I. ZERBE, Franklin; J. B. JOHNSON, Ligonier; J. A. BROOKE, Philadelphia; W. C. BRYANT, V. S. GAGGIN, H. S. NICHOLSON, S. N. POOL, G. F. TUCKER, Pittsburgh; J. L. WAGNER, Reading; H. B. SUMMERVILLE, Rimersburg; W. J. SCANLAN, Shenandoah; W. L. DILLER, Springville; J. W. ROYER, Terre Hill; J. A. KNOX, F. S. ULLOM, Waynesburg; Lieuts. H. B. ROOP, Columbia; A. S. CANTOR, Dickson City; C. E. BORTNER, Hanover; J. H. KRIEDER, Harrisburg; G. N. SPROWLS, Imperial; G. W. CONRAD, H. R. MATHER, Johnstown; C. T. FARIES, Narbeth; C. CADWALLADER, Philadelphia; C. P. LEININGER, N. F. ROCK, Pittsburgh; F. J. GABLE, Reading; R. F. WEAVER, St. Clair.

To Hoboken, N. J., Lieuts. W. S. WALLACE, East Brady; C. V. HART, Harrisburg; M. M. THOMSON, Pitcairn.

To Mineola, N. Y., Hazelhurst Field, Capt. C. W. JENNINGS, Pittsburgh.

To New Haven, Conn., Yale Army Laboratory School, for instruction, Capt. H. K. CAREY, Philadelphia.

To Washington, D. C., St. Elizabeth's Hospital, for instruction, Capt. J. R. GORMLEY, Monaca.

Porto Rico

To Camp Custer, Mich., Lieut. J. A. HERNANDEX, Jayuya.

To Camp Las Casas, P. R., Lieuts. R. R. AULET, Arecibo; J. J. NOGUERAS, Cayey; T. J. RAMIREZ, Mayaguez.

Rhode Island

To Fort Oglethorpe for instruction, Lieut. P. APPLETON, Providence.

To Williamsbridge, N. Y., Lieut. C. R. DOTEN, Providence.

South Carolina

To Camp Custer, Mich., base hospital, Lieut. D. V. MYERS, Spartanburg.

To Camp Lee, Va., Capt. W. EGLESTON, Hartsville; Lieut. J. D. BEARDEN, Central.

To Fort Oglethorpe for instruction, Capts. S. B. SHERARD, Gaffney; R. M. FULLER, McCormick; Lieuts. D. H. SMITH, Glenn Springs; C. D. ROLLINS, Lake City.

To Hoboken, N. J., Lieut. H. T. SCOTT, Cowpene.

South Dakota

To Rockford, Ill., base hospital, Capt. B. T. GREEN, Brookings.

Tennessee

To Camp Lee, Va., Capt. J. K. P. BLACKBURN, Pulaski.

To Camp Sheridan, Ala., Capts. S. A. MOFFITT, Cornersville; T. W. FIELDS, Dresden.

To Fort Oglethorpe for instruction, Capts. W. L. SIMPSON, Memphis; R. W. DAKE, Nashville; Lieuts. R. K. BAKER, Eads; J. L. COOLEY, Lynchburg; C. P. MARSH, Petersburg.

To Fort Riley for instruction, Lieuts. W. W. KIMSEY, Ducktown; R. C. KIMBROUGH, Madisonville; P. H. WOOD, Memphis.

Texas

To Camp Kearney, Calif., Lieuts. W. A. BOYCE, Dallas; A. H. FORTNER, Sweetwater.

To Camp Lee, Va., Lieut. D. EDRINGTON, Avery.

To Camp MacArthur, Texas, Capt. S. M. ALEXANDER, Abilene; Lieut. J. H. CATON, Detroit.

To Camp Travis, Texas, base hospital, Lieut. W. NOBLE, Aransas Pass.

To Fort Oglethorpe for instruction, Capts. A. B. CRAIN, Belton; J. S. DAVIS, Dallas; B. F. STEVENS, El Paso; K. V. KIBBIE, Fort Worth; J. R. KIGHT, San Angelo; Lieuts. J. N. LIGHTSEY, Cotulla; J. O. ROGERS, Red Oak; C. C. SORRELLS, Royse City.

To Fort Riley for instruction, Lieut. C. A. SHAW, Pinehill.

To Fort Worth, Texas, base hospital, Lieut. R. R. ROSS, San Antonio.

Utah

To Camp Kearney, Calif., Capt. E. D. HAMMOND, Salt Lake City.

To Fort Oglethorpe for instruction, Lieut. T. C. HILL, Huntington.

Vermont

To Camp Lee, Va., Lieut. L. ABERNATHY, Bakersfield.

To Fort Oglethorpe for instruction, Capt. W. LINDSAY, Montpelier; Lieuts. W. M. HUNTINGTON, Rochester; C. P. MUNSELL, South Royalton.

Virginia

To Camp Lee, Va., Capt. K. BRADFORD, Staunton; Lieut. C. L. BRADSHAW, Falmouth.

To Camp Wheeler, Ga., base hospital, Capt. J. W. WHITE, Norfolk.

To Fort Oglethorpe for instruction, Capts. C. T. PIERCE, Litwalton; J. W. WALTERS, Lynchburg; J. H. HIDEN, Pungoteague; A. L. TYNES, Staunton; W. F. HARTMAN, Swoope; Lieuts. C. B. PRITCHETT, Danville; W. H. WHITEHEAD, Lowesville; F. O. PLUNKETT, Lynchburg; R. R. HOSKINS, Mathews; J. W. TURMAN, Richmond; W. S. SLICER, Roanoke; W. C. PETERSON, University.

To Hoboken, N. J., Lieuts. F. M. HORSLEY, Lovingston; H. C. GRANT, Norfolk.

Washington

To Camp Kearney, Calif., Lieut. R. E. AHLQUIST, Spokane.

To Camp Lewis, Wash., base hospital, Capt. E. A. LUPTON, Spokane.

To Fort Riley for instruction, Lieut. L. MOFFITT, Yakima.

To New York, Neurological Institute, for instruction, Major W. N. KELLER, Fort Steilacoom.

West Virginia

To Hoboken, N. J., Lieut. E. B. STALEY, Sherrard.

Wisconsin

To Camp Custer, Mich., Lieut. P. J. MAJERUS, Sullivan.

To Camp Lee, Va., Capt. T. E. FARRELL, Seneca.

To Camp Sherman, Ohio, Capt. J. GOMBER, Gillett.

To Fort Oglethorpe for instruction, Lieuts. O. E. A. WESTEDT, Loganville; W. J. MURPHY, Milwaukee.

To Fort Riley for instruction, Capt. E. A. KETTERER, Montford; Lieut. H. E. BURGER, Beloit.

To Fort Sheridan, Ill., Capt. T. L. HARRINGTON, Milwaukee.

To Milwaukee, Wis., as examiner, Capt. J. D. MADISON, Milwaukee.

Wyoming

To Fort Riley for instruction, Capt. O. P. HAMILTON, Sheridan.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. J. R. MORGAN, Heflin.

To Camp Beauregard, La., base hospital, from Camp Shelby, Capt. J. SHAHAN, Gadsden.

To Camp McClellan, Ala., from Camp Holabird, Capt. J. M. WHITESIDE, Anniston. Evacuation hospital, from Camp Wheeler, Capt. E. M. MASON, Birmingham.

To Fort Oglethorpe for instruction, Lieut. W. F. HAMILTON, Pell City; from Fort Barrancas, Capt. F. P. PETTEY, Albany; from the Surgeon-General's Office, Capt. W. A. SELLERS, Montgomery.

To Newsport News, Va., base hospital, from Camp Lee, Lieut. B. B. EDWARDS, Union Springs.

Arizona

To Fort Douglas, Utah, from Camp Cody, Lieut. G. F. MANNING, Flagstaff.

To Hampton, Va., Langley Field, from Mineola, Capt. E. W. ADAMSON, Douglas.

To Walter Reed General Hospital, D. C., from Fort Oglethorpe, Capt. C. A. THOMAS, Tucson.

Arkansas

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Jefferson Barracks, Major W. K. READ, Texarkana.

To Rockefeller Institute for instruction, from New Haven, Lieut. J. C. SIMPSON, Hamburg.

California

To Camp Fremont, Calif., as orthopedic surgeon, from San Francisco, Lieut. T. R. CUNNANE, Los Angeles. Base hospital, from San Francisco, Lieut. C. A. CRAIG, San Francisco.

To Camp Greene, N. C., evacuation hospital, from Fort Oglethorpe, Lieut. W. L. DENTON, Randsburg.

To Camp Kearney, Calif., as orthopedic surgeon, from San Francisco, Lieut. J. SWANCOTT, Los Angeles.

To Camp Logan, Texas, base hospital, Capt. I. R. BANCROFT, Los Angeles.

To Camp Pike, Ark., evacuation hospital, from Camp Fremont, Major L. P. HOWE, San Francisco.

To Camp Sheridan, Ala., evacuation hospital, from Camp Kearney, Capt. J. H. PETTIS, Fresno.

To Camp Upton, N. Y., as orthopedic surgeon, from Fort Oglethorpe, Lieut. H. H. McCOY, San Francisco.

To Camp Zachary Taylor, Ky., base hospital, from Army Medical School, Capt. T. H. T. WIGHT, Santa Monica.

To Fort Douglas, Utah, from Camp Fremont, Capt. A. L. BROWN, Riverside; from Camp Pike, Major W. C. CHIDESTER, San Mateo.

To Jefferson Barracks, Mo., base hospital, from Camp Lewis, Capts. H. W. SEAGER, Los Angeles; N. C. BISSELL, Modesto; Lieut. J. C. WILLIAMS, Fresno.

To report to the commanding general, Philippine Department, from Camp Lewis, Lieut. G. P. HALL, Sunnyvale.

To San Francisco, Calif., evacuation hospital, from Camp Fremont, Capt. W. L. ADAMS, Fresno. For instruction, and on completion *to his proper station*, from Camp Fremont, Capt. T. R. McNAB, Los Angeles; from Camp Kearney, Lieuts. B. W. JOHNSON, Dos Palos; G. T. BOYD, Los Angeles; R. G. VAN NUYS, Oakland; W. F. PRIESTLEY, Stockton.

Canal Zone

To report to the commanding general, Panama Canal Department, Lieut. W. W. COOK, Christobal.

Colorado

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Camp Dodge, Lieut. W. H. HALLEY, Pueblo.

To Camp Dodge, Iowa, evacuation hospital, from Camp Logan, Lieut. R. A. PAINE, Denver.

To Camp Lewis, Wash., from Camp Kearney, Major A. J. MARKLEY, Denver. Base hospital, Capt. F. R. SPENCER, Boulder.
To Camp Wadsworth, S. C., base hospital, from Army Medical School, Capt. P. HILLKOWITZ, Denver.
To Fort Oglethorpe for instruction, Capt. C. D. McKENZIE, Denver.
To report to the commanding general, Philippine Department, from Camp Cody, Lieut. N. H. KNOCH, Denver.

Connecticut

To Camp Meade, Md., Lieut. M. J. FOLEY, Bridgeport.
To Camp Sevier, S. C., from Camp Lee, Capt. N. L. DEMING, Litchfield.
To Washington, D. C., from duty as medical aide to the governor of Connecticut, Capt. D. C. BROWN, Danbury.

District of Columbia

To Camp Greene, S. C., to examine the command for nervous and mental diseases, from Camp Devens, Lieut. C. B. COVEY, Washington.
To Fort Ontario, N. Y., base hospital, from Army Medical School, Lieut.-Col. G. H. SCOTT, Washington.
To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Washington, Major R. Y. SULLIVAN, Washington.
To Walter Reed General Hospital, D. C., from Jeffersonville, Ind., Capt. W. J. MANNING, Washington.
To Washington, D. C., for instructions and on completion *to New Haven, Conn.*, Yale Army Laboratory School, from Southern Department, Major J. S. SIMMONS, Washington.
To West Point, Ky., as camp surgeon, from Southern Department, Major A. S. WILDE, Washington.

Florida

To Camp Travis, Texas, from Douglas, Ariz., Lieut. B. H. PALMER, Tampa.
To Fort McPherson, Ga., Lieut. C. R. MARNEY, Tampa.
To Mineola, N. Y., Hazelhurst Field, for instruction, from Fort Oglethorpe, Lieut. M. A. LISCHKOFF, Pensacola.
To Washington D. C., Surgeon-General's Office, from Camp Hancock, Capt. R. E. BALDWIN, Tampa.

Georgia

To Camp A. A. Humphreys, Va., Lieut. H. J. CARSWELL, Waycross.
To Camp Devens, Mass., as orthopedic surgeon, from Fort Oglethorpe, Lieut. J. D. BLACKBURN, Atlanta.
To Camp Gordon, Ga., Capt. W. MATHEWS, Quitman.
To Camp Lee, Va., Lieut. T. M. VORBRINK, Savannah.
To Camp Sevier, S. C., Lieut. R. M. AVERY, Chipley; from Fort McPherson, Major G. D. HEATH, Jr., Fort McPherson. Base hospital, from Fort Oglethorpe, Lieut. J. E. MORRISON, Savannah.
To Camp Sheridan, Ala., from Fort McPherson, Capt. H. J. ROSENBERG, Atlanta.
To Camp Wadsworth, S. C., Lieut. W. E. SIMMONS, Metter.
To Camp Wheeler, Ga., base hospital, from Fort Oglethorpe, Lieut. A. SMITH, Atlanta.
To Fort Oglethorpe for instruction, Capts. H. B. ALLEN, L. F. GRUBBS, Americus.
To Hoboken, N. J., Major C. L. CHASE, Chickamauga.
To report to the commanding general, Eastern Department, Lieut. J. C. HARRIS, Collins.

Hawaii

To report to the commanding general, Hawaiian Department, Lieut. H. L. ROSS, Kealskekua.

Idaho

To San Francisco, Calif., for instruction, and on completion *to his* proper station, from Camp Lewis, W. S. TITUS, Boise.
To Syracuse, N. Y., from Fort Sill, Lieut. C. W. WILLIAMS, Laclede.

Illinois

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Capt. W. E. SHACKLETON, Chicago.
To Camp Beauregard, La., base hospital, from Camp Jackson, Capt. O. T. SCHULTZ, Chicago.
To Camp Custer, Mich., from Central Department, Capt. W. F. GRAYSON, Granite City; Lieut. R. T. FARLEY, Chicago.
To Camp Devens, Mass., as orthopedic surgeon, from Fort Oglethorpe, Lieut. P. B. GREENBURG, Chicago.
To Camp Grant, Ill., base hospital, Lieut. F. H. FALLS, Chicago.
To Camp Jackson, S. C., evacuation hospital, from Camp Meade, Capt. F. W. BRODERICK, Sterling.
To Camp Joseph E. Johnston, Fla., base hospital, from Fort Oglethorpe, Lieut. G. L. McWHORTER, Chicago.
To Camp Las Casas, P. R., from Camp Lee, Lieut. H. S. BLESSE, South Chicago.
To Camp Lewis, Wash., as orthopedic surgeon, from San Francisco, Lieut. F. J. SCHICK Chicago. Base hospital, from Portland, Lieut. O. H. CHRISTOFFERSEN, Chicago.
To Camp Logan, Texas, base hospital, from Fort Oglethorpe, Capt. H. A. WARE, Chicago.
To Camp McClellan, Ala., base hospital, from Fort Oglethorpe, Lieut. H. F. MOORE, Rockford. Evacuation hospital, from Cape May, Lieut. A. A. LeBEAU, Chicago.
To Camp Pike, Ark., from Fort Riley, Lieut. J. C. SMALL, Chicago.
To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieut. A. PEARMAN, Rockford.
To Camp Sheridan, Ala., evacuation hospital, from Baltimore, Major E. A. GRAHAM, Chicago.
To Camp Sherman, Ohio, as tuberculosis examiner, from New Haven, Lieut. G. K. FENN, Chicago Heights.
To Camp Travis, Texas, from Southern Department, Lieut. F. A. BLESSE, Chicago.
To Camp Upton, N. Y., as orthopedic surgeon, from Fort Oglethorpe, Lieut. G. L. VENABLE, Chicago.
To Camp Wheeler, Ga., base hospital, from Army Medical School, Lieut. F. C. CALDWELL, Chicago.
To Camp Zachary Taylor, Ky., base hospital, from Army Medical School, Capt. W. G. BAIN, Springfield.
To Fort Oglethorpe for instruction, Capt. T. H. PAGE, Peoria; Lieuts. D. N. EISENDRATH, Chicago; G. W. HUBER, Tuscola.
To Fort Riley, as tuberculosis examiner, from New Haven, Lieut. R. W. HARRELL, Chicago.
To Hoboken, N. J., from the Surgeon-General's Office, Lieut. W. R. WHITLEY, Chicago.
To Jefferson Barracks, Mo., from Camp Fremont, Major J. W. TURNER, Pleasant Hill. Base hospital, from Camp McClellan, Capt. W. H. MALEY, Galesburg.
To Lakewood, N. J., Lieuts. O. C. HYSLOP, A. SUMMERS, Chicago.
To report to the commanding general, Philippine Department, from Camp MacArthur, Capt. A. H. WEIS, Chicago.
To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Grant, Capt. C. C. CLARK, Chicago.
To San Antonio, Texas, Kelly Field, to examine the command for nervous and mental diseases, from Camp Cody, Lieut. L. M. OCHS, East Moline.
To Washington, D. C., for instructions, and on completion *to Newport News, Va.*, from Hoboken, Capt. V. M. DALY, Pontiac. St. Elizabeth's Hospital, for intensive training, from Fort Oglethorpe, Lieut. H. M. ENGLISH, Marshall. Surgeon-General's Office, from Camp Dodge, Major J. L. MILLER, Chicago.

Indiana

To Azalea, N. C., from Camp Wadsworth, Lieut. A. M. WINKLEPLECK, Alfordsville.
To Camp Grant, Ill., from Fort Benjamin Harrison, Major T. C. STUNKARD, Terre Haute.
To Camp Hancock, Ga., base hospital, from Fort Oglethorpe, Capt. C. C. DUBOIS, Warsaw.
To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. O. O. MELTON, Hammond.
To Camp Sheridan, Ala., base hospital, from Fort Oglethorpe, Capt. H. A. Ray, Fort Wayne.
To Camp Wheeler, Ga., base hospital, from Fort Oglethorpe, Capt. D. S. WIGGINS, New Castle.
To Camp Zachary Taylor, Ky., from Camp Grant, Capt. J. R. DILLINGER, French Lick.
To Fort Oglethorpe for instruction, Capt. C. E. ORDERS, Indianapolis; J. M. WALLACE, Ridgeville; G. W. ANGLIN, Warsaw; Lieuts. H. C. FRICK, Evansville; C. S. AUBLE, Indianapolis.
To Garden City, N. Y., from Lee Hall, Va., Lieut. G. W. KIMBALL, La Porte.
To Hoboken, N. J., Lieut. J. M. QUICK, Muncie.
To Lonoke, Ark., Eberts Field, from Lake Charles, La., Capt. D. D. JOHNSTON, Fort Wayne.

Iowa

To Camp A. A. Humphreys, Va., Lieut. B. L. TREY, Parkersburg.
To Camp Jackson, S. C., evacuation hospital, from Fort Oglethorpe, Lieut. W. J. FOSTER, Wellman.
To Camp Travis, Texas, from Southern Department, Lieut. R. V. HENRY, Hedrick.
To Fort Oglethorpe for instruction, Lieut. M. J. McVAY, Lake City.
To Fort Riley, as tuberculosis examiner, from New Haven, Capt. J. T. PADGHAM, Grinnell.
To Rochester, Minn., Mayo Clinic, for instruction, and on completion, *to his proper station*, from Camp Dodge, Capt. C. S. JAMES, Centerville; from Camp Grant, Capt. I. E. NERVIG, Sioux City; from Camp Zachary Taylor, Lieut. A. E. ACHER, Fort Dodge.
To Rockefeller Institute for instruction, from New Haven, Lieut. M. T. MORTON, Iowa City.
To West Point, Ky., Lieut. G. GOULD, Iowa City.
To report to the commanding general, Philippine Department, from Camp MacArthur, Lieuts. G. BRAUNLICH, Davenport; A. D. SMITH, Mason City.

Kansas

To Camp Custer, Mich., base hospital, from Fort Oglethorpe, Capt. L. C. LEWIS, Kansas City.
To Camp Gordon, Ga., as orthopedic surgeon, from Fort Oglethorpe, Lieut. E. D. RODDA, Arma.
To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Fort Riley, Capt. C. J. McGEE, Leavenworth.
To Walter Reed General Hospital, D. C., from Fort Oglethorpe, Capt. J. W. FAUST, Kansas City.

Kentucky

To Camp MacArthur, Texas, base hospital, from Fort Oglethorpe, Lieut. J. S. McGINNIS, Lexington.
To Camp Zachary Taylor, Ky., Lieut. E. STUMBO, Smalley.
To Fort Caswell, N. C., from duty as a private, Lieut. O. N. BERGEMEYER, Dayton.

Louisiana

To Camp Lee, Va., base hospital, from Richmond, Major O. L. POTHIER, New Orleans.
To Fort Benjamin Harrison, as post surgeon, from Camp Wadsworth, Major R. HUNT, Shreveport.
To Fort Oglethorpe, evacuation hospital, from Camp Dodge, Lieut. P. E. WERLEIN, New Orleans. For instruction, Capt. W. B. CHAMBERLIN, Baton Rouge; Lieut. J. S. DUNN, New Orleans.
To New Orleans, La., with examining board, from the Surgeon-General's Office, Major I. DYER, New Orleans.

Maine

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. L. F. CARTER, Bangor.
To Camp Zachary Taylor, Ky., base hospital, from Fort Oglethorpe, Lieut. L. H. TRUFANT, Norway.
To Hoboken, N. J., from Camp Upton, Capt. A. H. LITTLE, Portland.
To Mineola, N. Y., Hazelhurst Field from Buffalo, Capt. W. E. WHITNEY, Bangor.

Maryland

To Camp A. A. Humphreys, Va., as tuberculosis examiner, from Camp Upton, Lieut. S. NEWMAN, Baltimore.
To Camp Greene, N. C., evacuation hospital, from Camp Grant, Lieut. J. J. CHISOLM, Baltimore.
To Camp Meade, Md., base hospital, from Camp Lee, Lieut. R. K. FOXWELL, Cambridge.

To Camp Pike, Ark., from Fort Riley, Lieut. T. M. RIVERS, Baltimore.

To Camp Sevier, S. C., base hospital, from Army Medical School, Lieut. R. M. HALL, Baltimore.

To Camp Shelby, Miss., from Army Medical School, Lieut. R. S. CUNNINGHAM, Baltimore; from Camp McClellan, Major H. GROSS, Baltimore.

To Camp Zachary Taylor, Ky., from Camp Hancock, Capt. T. R. PAYNE, Corbett.

To Fort Oglethorpe for instruction, Major R. P. BAY, Baltimore; from Camp Wadsworth, Lieut. V. H. CONDON, Baltimore.

To New York City, Neurological Institute, for instruction, and on completion *to his proper station*, from Camp Sheridan, Capt. G. O. SHARRETT, Cumberland.

To Washington, D. C., St. Elizabeth's Hospital, from Camp Meade, Capt. D. D. V. STUART, Jr., Baltimore; from Fort Oglethorpe, Lieut. W. C. CHANEY, Chaney.

The following order has been revoked: *To Camp Meade, Md.*, base hospital, Capt. S. McCLEARY, Baltimore.

Massachusetts

To Boston, Mass., from duty as a contract surgeon, Lieut. G. H. POIRIER, Boston. Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. D. F. MURPHY, Beverly. *To give orthopedic instruction*, Major K. EMERSON, Worcester.

To Camp Devens, Mass., base hospital, Major S. J. MIXTER, Boston.

To Camp Forrest, Ga., to examine drafted men for nervous and mental diseases, and on completion *to Fort McPherson, Ga.*, from Fort Oglethorpe, Lieut. D. B. COLEMAN, Wellesley.

To Camp Greene, N. C., as camp psychiatrist, from Camp Sheridan, Capt. H. L. STICK, Baldwinsville. Evacuation hospital, from Camp Gordon, Capt. S. C. COX, Holyoke.

To Camp McClellan, Ala., from Hot Springs, N. C., Lieut. C. S. NEISTADT, Fall River.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieut. H. S. POMEROY, Peabody.

To Camp Sheridan, Ala., evacuation hospital, from Camp Devens, Lieut. W. K. TURNER, New Bedford.

To Camp Sherman, Ohio, to examine the command for nervous and mental diseases, from New York, Lieut. G. VAN N. DEARBORN, Cambridge.

To Camp Travis, Texas, to examine the command for nervous and mental diseases, from Fort Oglethorpe, Capt. W. Y. SEYMOUR, State Farm.

To Camp Wadsworth, S. C., base hospital, from Army Medical School, Lieut. L. C. HAVENS, Cambridge.

To Colonia, N. J., from Walter Reed General Hospital, Lieut. E. KING, Boston.

To Fort Douglas, Utah, from Camp Lewis, Lieut. R. L. READLES, Coffeeville.

To Fort Oglethorpe, evacuation hospital, Major H. T. HUTCHINS, Boston. For instruction, Capt. T. W. MURPHY, Lawrence; Lieuts. G. L. CHAFFIN, Boston; I. I. HILTON, Lawrence; S. C. EVELETH, Marblehead; E. D. RICHMOND, Reading.

To Fort Riley, base hospital, from Boston, Major M. H. ROGERS, Boston.

To Garden City, N. Y., Lieuts. B. D. WETHERELL, Holyoke; J. J. TOPHAM, Lowell.

To Jefferson Barracks, Mo., base hospital, from Camp Devens, Major D. F. JONES, Boston.

To Newport News, Va., as orthopedic surgeon, from Fort Oglethorpe, Lieut. M. E. SIMMONS, Boston.

To New York, Neurological Institute, for instruction, from Camp Meade, Capt. H. E. MAYNARD, Winchester.

To Rockefeller Institute for instruction, from New Haven, Lieut. G. L. BUNNELL, Foxboro.

To Walter Reed General Hospital, D. C., from Fort Oglethorpe, Lieut. A. F. SARGENT, Boston.

To Williamsbridge, N. Y., from Camp Dix, Lieut. F. J. QUIST, Worcester.

Michigan

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Camp Devens, Lieut. H. L. KEIM, Ann Arbor; from Fort Oglethorpe, Lieut. C. E. TREUSDELL, Denton.

To Camp Custer, Mich., base hospital, Capt. C. N. GAUSS, Palo.

To Camp Fremont, Calif., from Camp Kearney, Lieut. H. B. McCRORY, Birch Run.

To Camp Greene, N. C., evacuation hospital, from West Point, Capt. A. R. McKINNEY, Saginaw.

To Camp Hancock, Ga., base hospital, from Fort Oglethorpe, Lieut. L. H. TOWER, Battle Creek.

To Camp McClellan, Ala., base hospital, from Fort Oglethorpe, Capt. W. T. PARKER, Corunna.

To Camp Sherman, Ohio, base hospital, Capt. F. J. SLADEN, Detroit.

To Camp Upton, N. Y., base hospital, Capt. T. S. LANGFORD, Ann Arbor.

To Fort Oglethorpe, from Camp Meade, Major N. B. FOSTER, Ann Arbor.

To Hoboken, N. J., from Camp Sherman, Lieut. C. W. OLSON, Escanaba.

To Plattsburg Barracks, N. Y., from Fort Onatrio, Lieut. H. A. REYE, Detroit.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Grant, Ill.*, base hospital, from Fort Oglethorpe, Capt. R. J. E. ODEN, Cadillac.

Minnesota

To Camp Custer, Mich., Lieut. F. B. MORRISSEY, St. Paul; from Camp Dodge, Capt. W. H. EATON, Duluth.

To Camp Fremont, Calif., from Camp Kearney, Lieut. N. P. ANDERSON, Dunnell.

To Camp John Wise, Texas, from Camp Kelly, Lieut. S. R. FRAKER, Cass Lake.

To Camp Pike, Ark., from Fort Riley, Capt. F. G. BLAKE, Minneapolis.

To Cape May, N. J., from Ann Arbor, Major J. F. CORBETT, Minneapolis.

To Fort Sam Houston, Texas, base hospital, from Fort Oglethorpe, Major A. R. COLVIN, St. Paul.

To New Haven, Conn., Yale Army Laboratory School, from Army Medical School, Lieuts. W. J. EKLUND, Duluth; W. J. CARSON, St. Paul.

To Newport News, Va., base hospital, from Hoboken, Lieut. B. N. SOROSE, Detroit.

To New York, Neurological Institute, for instruction, Capt. H. A. BEAUDOUX, St. Paul.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Dodge, Capt. H. P. BACON, Milaca.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Walter Reed General Hospital, Capt. E. M. JONES, St. Paul.

Mississippi

To Camp Beauregard, La., base hospital, Capt. G. W. MONTGOMERY, Louin.

To Camp Travis, Texas, from Camp Head Springs, Lieut. C. M. SPECK, New Albany.

To Fort Ontario, N. Y., to examine the command for nervous and mental diseases, Capt. J. H. FOX, Jackson.

To Fort Riley for instruction, Lieut. J. M. FOX, Jackson.

To report to the commanding general, Philippine Department, from Camp Bowie, Lieut. H. M. SMITH, Natchez.

The following order has been revoked: *To Camp McClellan, Ala.*, base hospital, from Fort Oglethorpe, Lieut. W. C. NORRIS, De Soto.

Missouri

To Arcadia, Fla., Carlstrom Field, as flight surgeon, from Hampton, Va., Capt. F. C. SIMON, St. Louis.

To Azalea, N. C., from Camp Bowie, Lieut. A. W. KOESSEL, St. Louis.

To Camp Abraham Eustis, Va., camp hospital, from Army Medical School, Lieut. O. F. BRADFORD, Columbia.

To Camp Beauregard, La., base hospital, from Fort Oglethorpe, Lieut. P. A. BRICKEY, St. Louis.

To Camp Greene, N. C., evacuation hospital, from New York, Lieut. C. E. HYNDMAN, St. Louis.

To Camp Jackson, S. C., evacuation hospital, from Fort Oglethorpe, Lieut. S. W. FAIR, Belton.

To Camp John Wise, Texas, from Camp Kelly, Lieut. P. C. DAVIS, Moberly.

To Camp Joseph E. Johnston, Fla., base hospital, Lieut. C. C. KLEINSHMIDT, St. Louis.

To Camp MacArthur, Texas, base hospital, from Fort Oglethorpe, Capt. G. A. MELLIES, St. Louis.

To Camp Pike, Ark., evacuation hospital, from Camp Bowie, Lieut. A. H. CLEVELAND, St. Louis; from Camp Kearney, Capt. R. D. STREETOR, Moberly; from Camp MacArthur, Capt. F. E. JACOBI, St. Louis; from Fort Riley, Major E. L. OPIE, St. Louis.

To Camp Upton, N. Y., as orthopedic surgeon, from Fort Oglethorpe, Lieut. N. ROSENBERG, Kansas City.

To Fort Oglethorpe as assistant instructor, Capt. W. E. SAUER, St. Louis. For instruction, Capts. P. F. COLE, Ewing; M. G. GORIN, St. Louis.

To Fort Riley, base hospital, from Fort Sill, Lieut. J. H. ARMSTRONG, Glendale. For instruction, Lieut. H. N. DE MENIL, St. Louis.

To Fort Wayne, Mich., Capt. D. H. BOKHOF, Kansas City; Lieut. R. E. GERSTENKERN, Kansas City.

To Hoboken, N. J., evacuation hospital, from Camp Wadsworth, Lieut. O. U. NEWELL, St. Louis.

To Jefferson Barracks, Mo., base hospital, from Camp Dodge, Lieut. E. C. GRIM, Kirksville; from Fort Oglethorpe, Capt. M. W. MEYER, Columbia.

To Mineola, N. Y., Hazelhurst Field, from Dallas, Lieut. S. E. ROBERTS, Kansas City. For instruction, from St. Louis, Lieut. H. W. LYMAN, St. Louis.

To New Haven, Conn., Yale Army Laboratory School, from Army Medical School, Capt. R. BUHMAN, St. Louis.

To report to the commanding general, Philippine Department, from Camp Lewis, Lieut. A. J. SMITH, Boonville; from Camp Logan, J. B. WHITE, St. Louis.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to their proper stations*, from Camp Custer, Capts. C. L. COOPER, Kansas City; B. A. DUMBAULD, Webb City.

The following order has been revoked: *To Camp Pike, Ark.*, from Fort Riley, Lieut. B. H. EMERSON, Stockton.

Montana

To Camp Custer, Mich., from Central Department, Major F. J. ADAMS, Great Falls.

To Jefferson Barracks, Mo., base hospital, from Camp Lewis, Lieut. L. P. GAERTNER, Three Forks.

To Rockefeller Institute for instruction, from New Haven, Lieut. J. D. HOBSON, Missoula.

To San Francisco, Calif., for instruction, and on completion *to his proper station*, from Camp Lewis, Capt. E. F. DODDS, Missoula.

To report to the commanding general, Philippine Department, from Camp Kearney, Lieut. W. I. FIREY, Roundup.

Nebraska

To Camp Devens, Mass., base hospital, from Syracuse, N. Y., Capt. J. A. HENSKE, Omaha.

To Camp Meigs, Wash., for instruction and on completion *to Camp Meade, Md.*, from Surgeon-General's Office, Capt. L. CRUMMER, Omaha.

To Camp Sherman, Ohio, as tuberculosis examiner, from New Haven, Capt. L. S. ROBINSON, Kearney.

To Camp Wheeler, Ga., base hospital, from Fort Oglethorpe, Lieut. J. S. McAVIN, Omaha.

To Fort Riley, as tuberculosis examiner, from New Haven, Lieut. G. S. REEDER, Fremont.

To Washington, D. C., St. Elizabeth's Hospital, for instruction, from Camp Wadsworth, Capt. S. J. STEWART, Hastings.

Nevada

To Camp Fremont, Calif., Capt. J. R. CUNNINGHAM, Tonopah.

To San Francisco, Calif., for instruction, and on completion *to his proper station*, from Camp Kearney, Capt. E. K. SMITH, Lovelock.

New Hampshire

To Colonia, N. J., from Walter Reed General Hospital, Capt. F. S. TOWLE, Portsmouth.

To Fort Oglethorpe for instruction, Capt. F. M. N. ROBERTSON, Bristol.

The following order has been revoked: *To Camp John Wise, Texas*, from Camp Kelly, Capt. D. R. CHASE, Lebanon.

New Jersey

To Camp Custer, Mich., base hospital, from Rockefeller Institute, Lieut. A. J. NEWMAN, Jersey City.

To Camp Dodge, Iowa, from Hoboken, Lieut. J. L. WILSON, Jersey City.

To Camp Gordon, Ga., as orthopedic surgeon, Lieut. D. A. CURTIS, Paterson.

To Camp Hancock, Ga., base hospital, from Fort Oglethorpe, Capt. A. S. HARDEN, Newark.

To Camp Jackson, S. C., base hospital, from Fort Oglethorpe, Major C. E. SUTPHEN, Newark. Evacuation hospital, from Camp McClellan, Capt. H. D. BELLIS, Trenton.

To Colonia, N. J., from Camp Dix, Lieut. C. BROWNE, Princeton.

To Fort Oglethorpe for instruction, from Camp Upton, Lieut. L. D. WHITNEY, Belleville.

To Mount Clement, Mich., Selfridge Field, from Mineola, Lieut. S. Z. ORGEL, Hackensack.

To San Antonio, Texas, Kelly Field, *to examine the command* for mental and nervous disease, from Montgomery, Lieut. M. DOBRIN, Montclair.

New Mexico

To Camp Kelly, Texas, from Mineola, Capt. W. MacLAKE, Silver City.

New York

To Camp A. A. Humphreys, Va., Capt. W. G. BAETZ, Woodhaven. As tuberculosis examiner, from Camp Upton, Lieut. A. C. ABBOTT, Syracuse.

To Camp Dix, N. J., Capt. H. G. GERMER, Canastota; from Fort Oglethorpe, Lieut. J. L. LINN, Brooklyn.

To Camp Gordon, Ga., base hospital, from Camp Lee, Lieut. H. BAKWIN, New York.

To Camp Greene, N. C., evacuation hospital, from Camp Upton, Lieut. J. L. WOZNIAK, Schenectady.

To Camp Hancock, Ga., base hospital, from Army Medical School, Lieut. R. M. FERRY, New York.

To Camp Jackson, S. C., from Williamsbridge, Capt. H. M. WEED, Buffalo.

To Camp Joseph E. Johnston, Fla., base hospital, from Fort Oglethorpe, Lieut. A. A. J. JOHNSON, Brooklyn.

To Camp Lee, Va., from Fort Slocum, Major I. A. ALLEN, Ludlowville. Base hospital, from Fort Oglethorpe, Lieut. N. C. MARVEL, New York.

To Camp Pike, Ark., evacuation hospital, from Fort Ontario, Major M. BODENHEIMER, New York; from New York, Lieut. J. GOTTESMAN, New York.

To Camp Sheridan, Ala., as division psychiatrist, from Camp Gordon, Capt. L. M. WILBER, Jasper. Base hospital, from Fort Oglethorpe, Lieut. T. J. SULLIVAN, Brooklyn. Evacuation hospital, from Biltmore, Capt. H. C. W. SCHULTZ-DE BRUN, New York.

To Camp Sherman, Ohio, base hospital, from Camp Wheeler, Lieut. G. W. WHEELER, New York.

To Camp Wadsworth, S. C., as orthopedic surgeon, from Fort Oglethorpe, Lieut. J. C. O'NEILL, New York.

To Camp Wheeler, Ga., from Rockefeller Institute, Lieut. S. H. CURTIS, Troy. From the Surgeon-General's Office, Maor R. L. CECIL, New York. Base hospital, from Fort Oglethorpe, Lieuts. F. C. KELLER, G. F. SCUDDER, New York.

To Fort Benjamin Harrison, base hospital, from Camp Dix, Capt. F. G. SCHAIBLE, New York; from Camp Grant, Lieut. W. L. McCANTY, Buffalo.

To Fort Douglas, Ariz., from Camp Travis, Capt. D. S. CHILDS, Syracuse.

To Fort McPherson, Ga., Capt. F. W. RICE, New York.

To Fort Oglethorpe, evacuation hospital, from Camp Meade, Lieut. F. P. SCHENKELBERGER, Gowanda. For instruction, Lieuts. A. B. TAYLOR, Mooers; F. M. FRANKFELDT, New York.

To Fort Sheridan, Ill., base hospital, from Camp McClellan, Capt. H. E. MELENEY, Brooklyn.

To Fort Snelling, Minn., base hospital, from Camp Devens, Lieut. J. A. WENTWORTH, Clifton Springs.

To Hoboken, N. J., from Walter Reed General Hospital, Capt. R. L. J. KEMEL, New York. Evacuation hospital, from Army Medical School, Lieuts. W. H. JONES, I. P. LaDUCA, Buffalo; from Camp Crane, Lieut. H. D. MacFARLAND, Westernville.

To Lakewood, N. J., Lieut. A. TOWBIN, New York.

To New Haven, Conn., Lieut. J. KAUNITZ, New York. Yale Army Laboratory School, from Army Medical School, Lieut. J. L. MANGANO, Buffalo.

To Newport News, Va., as orthopedic surgeon, from Fort Oglethorpe, Lieut. M. H. NEWTON, Ilion.

To report to the commanding general, Philippine Department, from Camp Cody, Lieut. G. B. WALLACE, New York.

To Rockefeller Institute for instruction, from New Haven, Lieuts. D. JUNG, Buffalo; D. S. DOOMAN, C. H. HOCHMAN, New York. For instruction in the treatment of infected wounds, and on completion *to Fort Oglethorpe* for instruction, Lieut. R. V. FUNSTON, New York.

To Williamsbridge, N. Y., Capt. C. C. JONES, New York; from Camp Upton, Lieut. M. J. LYNCH, New York.

North Carolina

To Azalea, N. C., from New Haven, Capt. B. K. HAYS, Oxford.

To Camp Abraham Eustis, Va., as sanitary inspector, from Camp Greene, Capt. D. C. ABSHER, Mount Airy.

To Camp Beauregard, La., base hospital, from Fort Oglethorpe, Lieut. G. E. BOWDOIN, Wilmington.

To Camp Logan, Texas, as tuberculosis examiner, from New Haven, Lieut. W. T. LONG, Roxboro.

To Camp Newton D. Baker, Texas, base hospital, from Camp McClellan, Lieut. H. RAY, Raleigh.

To Fort Oglethorpe for instruction, Lieut. R. B. WILKINS, Raeford.

North Dakota

To Fort Douglas, Utah, from Camp Lewis, Lieut. W. ANDERSON, Grand Forks.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Grant, Lieut. W. H. WITHERSTINE, Grand Forks.

Ohio

To Camp A. A. Humphreys, Va., Capt. F. J. WOOD, Lieut. O. H. RIEMENSCHNEIDER, Cleveland.

To Camp Crane, Pa., base hospital, from Rockefeller Institute, Lieut. S. H. MILLER, Marble Cliff.

To Camp Pike, Ark., from Fort Riley, Major A. W. FREEMAN, Columbus.

To Camp Sheridan, Ala., evacuation hospital, from Camp Zachary Taylor, Lieut. G. A. GORSUCH, Bowling Green.

To Camp Sherman, Ohio, base hospital, from New Haven, Major P. GATH, Cincinnati.

To Colonia, N. J., from Camp Lee, Lieut. H. S. SHAMANSKY, Cincinnati.

To Fairfield, Ohio, Wilbur Wright Field, from Columbus, Capt. A. H. SEEDS, Columbus.

To Fort Oglethorpe for instruction, Lieuts. W. R. KELLER, Canal Dover; N. J. SEYBOLD, Toledo.

To Fort Sam Houston, Camp Travis and *San Antonio, Texas*, from Camp Logan, Lieut. W. R. CHYNOWETH, Dayton.

To Hoboken, N. J., base hospital, from Camp Devens, Lieut. A. B. BROWER, Dayton.

To Jefferson Barracks, Mo., base hospital, from Camp Fremont, Capt. A. M. PAINTER, Youngstown.

To Williamsbridge, N. Y., from Camp Crane, Lieut. J. A. MELLON, Columbiana.

Oklahoma

To Camp Dodge, Ark., base hospital, Lieut. H. W. DOTY, Watonga.

To Camp Joseph E. Johnston, Fla., base hospital, from Fort Oglethorpe, Capt. B. LOVELADY, Guthrie.

To Camp McClellan, Ala., base hospital, from Camp Sherman, Lieut. J. W. NIEWEG, Duncan.

To Camp Pike, Ark., evacuation hospital, from Camp Bowie, Lieut. O. R. GREGG, Wavnoka; from Fort Oglethorpe, Lieut. D. W. VINCENT, Oklahoma City.

To Camp Sherman, Ohio, base hospital, from Army Medical School, Lieut. O. J. WALKER, Oklahoma City.

To Camp Wadsworth, S. C., Capt. H. H. CLOUDMAN, Oklahoma City.

To Fort Oglethorpe for instruction, Lieuts. L. A. MITCHELL, Frederick; C. A. JOHNSON, Kiswa.

To Fort Snelling, Minn., base hospital, from Camp Devens, Lieut. W. LANGSTON, Oklahoma City.

To report to the commanding general, Philippine Department, from Camp Cody, Capt. R. E. WELLER, Pawnee.

The following order has been revoked: *To Fort Riley* for instruction, Lieut. E. D. JAMES, Miami.

Oregon

To Camp Abraham Eustis, Va., from Western Department, Lieut. A. O. WALLER, Eugene.

To Camp Pike, Ark., evacuation hospital, from Camp Lewis, Capt. J. L. McCOOL, Portland.

To Jefferson Barracks, Mo., base hospital, from Camp Lewis, Lieut. H. P. BELKNAP, Jr., Portland.

Pennsylvania

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieuts. L. J. LIVINGOOD, Philadelphia; S. H. KELLER, Pittsburgh.

To Camp A. A. Humphreys, Va., from Fort Oglethorpe, Capt. E. M. HALEY, Blossburg.

To Camp Beauregard, La., base hospital, from Fort Oglethorpe, Lieut.-Col. A. C. ABBOTT, Philadelphia; Lieut. A. B. SMITH, Wyoming.

To Camp Crane, Pa., from Rockefeller Institute, Lieut. J. R. CONOVER, Philadelphia.

To Camp Custer, Mich., base hospital, from Houghton, Mich., Lieut. P. N. HUNSICKER, Beaver Meadows.

To Camp Forrest, Ga., from Central Department, Major H. TUCKER, Philadelphia.

To Camp Gordon, Ga., Lieut. H. H. STEWART, Friedensburg. Base hospital, from Fort Oglethorpe, Capt. A. R. MATHENY, Pittsburgh.

To Camp Hancock, Ga., base hospital, from Army Medical School, Capt. E. H. PERRY, Washington.

To Camp Jackson, S. C., evacuation hospital, from Fort Oglethorpe, Lieut. H. W. OSTRUM, Philadelphia.

To Camp Joseph E. Johnston, Fla., base hospital, from Fort Oglethorpe, Lieuts. G. S. HENSYL, Mahoney City; T. B. HERRON, Monessen.

To Camp Lee, Va., Capt. L. FISHER, Philadelphia. Base hospital, Capt. C. L. PALMER, Pittsburgh.

To Camp Logan, Texas, to examine the command for nervous and mental diseases, from Camp Wadsworth, Lieut. G. A. PARKER, South Bethlehem.

To Camp Upton, N. Y., Capt. B. P. STEELE, McVeytown.

To Camp Wheeler, Ga., to examine the command for nervous and mental diseases, from Camp Wadsworth, Lieut. M. H. WEINBERG, Pittsburgh.

To Colonia, N. J., from Camp Devens, Lieut. L. W. KOHN, Philadelphia.

To Fort McPherson, Ga., from Fort Oglethorpe, Capt. R. L. McNEER, Philadelphia.

To Fort Oglethorpe for instruction, Capt. W. G. EYMAN, Pittsburgh; Lieuts. J. G. KOSHLAND, Cassville; H. J. WILLIAMS, Germantown; G. HAY, Johnstown; W. D. BARRY, Philadelphia; H. C. GRIM, Trumbaursville.

To Jeffersonville, Ind., Lieut. Z. R. SCOTT, Pittsburgh.

To Lonoke, Ark., Eberts Field, from Lake Charles, La., Lieuts. J. D. JACKSON, Erie; S. L. WINGRADE, Philadelphia.

To New Haven, Conn., Yale Army Laboratory School, for instruction, Leiut. L. W. WRIGHT, Williamsport.

To Newport News, Va., base hospital, from Hoboken, Capt. M. SOLIS-COHEN, Philadelphia; Lieut. F. L. ALEXAITIS, Wilkes-Barre.

To New York, Neurological Institute, for instruction, Lieuts. C. A. BEHNEY and R. C. BUERKI, Philadelphia.

To Rockefeller Institute, from Camp Upton, Capt. J. V. KLAUDER, Philadelphia. For instruction, from New Haven, Lieuts. G. A. DAPP, Harrisburg; O. R. ETTER, Philadelphia; N. D. GANNON, Pittsburgh.

Porto Rico

To Camp Las Casas, P. R., base hospital, from Army Medical School, Lieut. L. A. SALIVA, Rio Piedras.

Rhode Island

To Camp Wadsworth, S. C., from Camp Custer, Lieut. R. METCALF, Providence.

South Carolina

To Camp Hancock, Ga., base hospital, Capt. L. C. SHECUT, Orangeburg.

To Camp Sheridan, Ala., from Fort Oglethorpe, Lieut. W. L. PRESSLY, Due West.

To Walter Reed General Hospital, D. C., from Fort Oglethorpe, Lieut. J. K. WICKER, Newberry.

South Dakota

To Camp Joseph E. Johnston, Fla., base hospital, from Boston, Lieut. L. J. BROCKMAN, Vermilion.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Dodge, Capt. J. D. WHITESIDE, Aberdeen; Lieut. R. G. STEVENS, Sioux Falls; from Camp Grant, Lieut. H. SPRAGUE, Huron; from Fort Riley Lieut. D. W. CRAIG, Sioux Falls.

Tennessee

To Biltmore, N. C., Lieut. H. C. WYSONG, Beech Grove.

To Camp Crane, Pa., from Camp Grant, Lieut. J. F. BINKLEY, Nashville.

To Camp Custer, Mich., from Central Department, Capt. J. D. HENDERSON, Knoxville.

To Camp Dick, Texas, from Dallas, Major V. K. EARTHMAN, Murfreesboro.

To Camp Hancock, Ga., base hospital, from Army Medical School, Lieut. R. V. DEPUE, Knoxville.

To Camp Jackson, S. C., evacuation hospital, from Fort Oglethorpe, Capt. J. B. SHOUN, Hampton.

To Camp Las Casas, P. R., Lieut. L. P. BROOKS, Chattanooga.

To Camp Logan, Texas, as tuberculosis examiner, from New Haven, Lieut. W. O. BAIRD, Memphis.

To Camp McClellan, Ala., from Atlanta, Capt. E. D. WATKINS, Memphis.

To Camp Sheridan, Ala., from Fort Oglethorpe, Lieut. C. T. WATERS, Memphis.

To Camp Zachary Taylor, Ky., Lieut. M. S. DAVIS, Fayetteville.

To Fort McPherson, Ga., Lieut. H. B. PARRISH, Nashville.

To Fort Oglethorpe, evacuation hospital, from Camp Upton, Major H. H. SHOULDERS, Nashville. For instruction, Lieut. L. S. McMULLEN, Knoxville.

To report to the governor of Tennessee as medical aide, Capt. P. DEWITT, Nashville.

To Washington, D. C., Surgeon-General's Office, from duty as medical aide to the governor of Tennessee, Major W. D. HAGGARD, Nashville.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Lieut. T. W. RHODES, Whiteville.

Texas

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Camp Devens, Lieut. H. SHANNON, Dallas.

To Camp A. A. Humphreys, Va., Lieut. R. E. STACK, Erwin.

To Camp Beauregard, La., base hospital, from Fort Oglethorpe, Lieut. J. CAMP, Pacos.

To Camp Custer, Mich., from Camp Meade, Lieut. A. J. MYNATT, Houston.

To Camp Greene, N. C., evacuation hospital, from Camp Gordon, Capt. C. C. GREENE, Houston.

To Camp Jackson, S. C., evacuation hospital, from Camp Logan, Lieut. F. N. HAGGARD, San Antonio.

To Camp MacArthur, Texas, base hospital, Capt. T. J. WALTHALL, San Antonio.

To Camp Pike, Ark., evacuation hospital, from Camp MacArthur, Lieut. O. S. McMULLEN, Victoria.

To Camp Travis, Texas, Lieut. C. T. DUFNER, Yoakum; from Camp Head Springs, Capt. F. O. BARRETT, El Paso; Lieut. R. E. PRIDGEN, Oakland; from Douglas, Ariz., Capt. F. H. SHAW, Marlin. Base hospital, Capt. O. EHLINGER, College Station; Lieut. J. E. HARRIS, Brazoria.

To Dallas, Texas, from Call Field, Capt. H. J. REGER, Vernon.

To Fort Oglethorpe for instruction, Capts. H. B. PEDIGO, Beaumont; F. P. HERFF, San Antonio; Lieut. S. ISRAEL, Houston.

To Hoboken, N. J., base hospital, from Camp Dix, Lieut. H. L. BROWN, Sherman. Evacuation hospital, from Fort Oglethorpe, Lieut. J. W. GOODE, San Antonio.

To report to the commanding general, Philippine Department, from Camp Travis, Lieut. C. K. ARNOLD, Bibles.

To Rochester, Minn., from Fort Myer, Lieut. R. ATKINSON, Pleasanton.

To Rockefeller Institute for instruction, from New Haven, Lieut. J. D. MARTIN, Call.

The following order has been revoked: *To Camp John Wise, Texas*, from Camp Kelly, Capt. T. P. BRYAN, Dublin.

Utah

To Camp Pike, Ark., evacuation hospital, from Western Department, Lieut. C. A. NYVALL, Salt Lake City.

To New Haven, Conn., Yale Army Laboratory School, for instruction, from Fort Riley, Lieut. J. J. GALLIGAN, Salt Lake City.

Vermont

To Atlanta, Ga., Georgia School of Technology, from Fort Oglethorpe, Capt. G. ROBERTS, Chester.

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. D. R. BROWN, Lyndonville.

To Carlisle, Pa., from Camp Devens, Capt. O. V. HEFFLON, Wardsboro.

To Rockefeller Institute for instruction, from New Haven, Lieut. A. L. FOGG, Underhill.

Virginia

To Boston, Mass., Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Capt. L. N. HARRIS, Harrisonburg.

To Camp Beauregard, La., base hospital, from Fort Oglethorpe, Lieut. C. C. CARR, Toms Creek.

To Camp Lee, Va., Lieut. F. F. RIGHTER, Richmond.

To Camp Upton, N. Y., Capt. H. R. DREWRY, Norfolk.

To Fort Oglethorpe for instruction, Capt. M. C. SYCLE, Richmond; Lieut. W. H. RE MINE, Lodi.

To Newport News, Va., from Army Medical School, Lieut. J. O. FITZGERALD, Richmond. Base hospital, from Hoboken, Lieut. P. E. TUCKER, Buckingham.

Washington

To Camp Dodge, Iowa, from Vancouver Barracks, Capt. G. W. PHILLIPS, Bridgeport.

To Camp Lewis, Wash., base hospital, from duty as a contract surgeon, Capt. H. G. LAZELLE, Seattle.

To Camp Travis, Texas, from Camp Newton D. Baker, Major E. BAILEY, Mansfield.

To Jefferson Barracks, Mo., base hospital, from Camp Lewis, Lieuts. W. L. JACKSON, Burlington; S. A. DE MARTINI, Tacoma.

To San Francisco, Calif., for instruction, and on completion *to his proper station*, from Camp Lewis, Capt. E. L. INGERSOLL, Spokane; Lieut. C. D. HUNTER, Tacoma; from Letterman General Hospital, Capt. E. E. BECKETT, Seattle.

West Virginia

To Camp Cody, N. M., base hospital, from Camp Bowie, Lieut. F. C. HODGE, Huntington.

To Camp Custer, Mich., from Central Department, Capt. N. R. PRICE, Marlinton.

To Camp Lee, Va., Capt. H. D. CAUSEY, Fairmont.

To Camp Sevier, S. C., base hospital, Capt. L. C. MORRISON, Milton.

To Camp Upton, N. Y., Lieuts. A. T. GORDON, Reedy; W. L. Y. CURREY, Sandyville.

To Edgewood, Md., base hospital, Lieut. B. S. PARKS, Spencer.

To Fort Oglethorpe for instruction, Capt. H. H. STAATS, Spencer; Lieuts. E. D. WELLS, Hinton; G. W. ABERSOLD, Wheeling.

To report to the commanding general, Philippine Department, from Camp Lewis, Capt. C. G. WILLIS, Kingston.

Wisconsin

To Azalea, N. C., Capt. E. W. SMITH, Madison.

To Camp Dodge, Iowa, base hospital, Lieut. A. T. SHEARER, Edgerton.

To Camp Joseph E. Johnston, Fla., base hospital, from Fort Oglethorpe, Capt. V. F. MARSHALL, Appleton.

To Camp McClellan, Ala., with the board examining the troops for cardiovascular diseases, from Washington, Lieut. D. H. WITTE, Hartford.

To Camp Meigs for instruction, and on completion *to Camp Meade, Md.*, from the Surgeon-General's Office, Major J. R. McDILL, Milwaukee.

To Camp Pike, Ark., evacuation hospital, from Camp Sherman, Lieut. C. E. STOLZ, Milwaukee; from Fort Oglethorpe, Capt. A. S. WHITE, Rice Lake; Lieut. H. L. GARNER, Rhinelander.

To Camp Sheridan, Ala., evacuation hospital, from Camp Shelby, Lieut. G. M. SMITH, Chippewa Falls.

To Camp Upton, N. Y., Lieut. C. A. WILSKE, Milwaukee.

To Fort Oglethorpe for instruction, Lieut. G. J. FLANNAGAN, Kaukauna.

To report to the commanding general, Philippine Department, from Camp Travis, Lieut. C. D. MARTIN, Wauwatosa.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Grant, Capt. P. A. FOX, Milwaukee.

To Washington, D. C., Surgeon-General's Office, from Milwaukee, Major G. V. I. BROWN, Milwaukee.

Wyoming

To Camp Sheridan, Ala., base hospital, from Fort Oglethorpe, Capt. W. A. STEFFEN, Sheridan.

To Camp Travis, Texas, from Southern Department, Lieut. H. O. BROWN, Sheridan.

Economic Cost of Syphilitic Mental Diseases to the State of New York.—The total number of patients of this description, including cases of general paralysis, cerebral syphilis and tabes dorsalis, in civil state hospitals, hospitals for criminal insane and in private licensed institutions on June 30, 1917, was 1,554. The number of those first admitted during the fiscal year, 1916-1917, was 965. The per capita cost of support of all patients under treatment in the civil state hospitals was $303.68. Assuming the cost to be no less in the other institutions, this gives the sum of $471,918.72 as the cost of maintenance of the 1,554 patients with syphilitic insanity for the year. To this cost is added the loss of earnings. Assuming that the period of productivity ends at the close of the sixty-fifth year, that the average earnings are the same throughout the years of productivity and amount to $500 above the cost of maintenance in the case of males, and to $100 in the case of females, one gets the staggering figure of $4,926,726.27 as the year's loss of earnings on the part of these patients, and therefore, a sum of $5,398,644.99 as the total loss to the state.—*Mental Hygiene.*

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Free Typhoid Inoculation.—Dr. Judson D. Dowling, health officer of Birmingham and Jefferson County, announces that free typhoid inoculation will be administered by his officials. The serum will be furnished by the United State Public Health Service.

Crusade Against Social Diseases.—Dr. Samuel W. Welch, state health officer of Alabama, Montgomery, announces that a crusade against social diseases in the state will be launched, September 2, under the direction of Prof. W. C. Blasingame, who will undertake to establish in every county a free clinic for the treatment of venereal diseases. For the support of this work about $23,000 has been appropriated to the state by the United States government, and it is expected that the state will contribute the remainder of the amount necessary for the successful conduct of this crusade.

CALIFORNIA

Unlicensed Practitioners Arrested.—"Dr." Chow Yuen, a Chinese herb doctor of Red Bluff and "Drs." Walter C. Hoyt and Lindsay, Manton, are said to have been arrested, August 21, on the charge of having practiced medicine without a license.

The Stehman Memorial.—The eighth annual report of the La Vina Sanatorium, Millard Canyon, sets forth the great and unselfish service rendered sufferers from tuberculosis by the late Dr. Henry B. Stehman, Pasadena, founder and president of the institution until his death. As a suitable memorial to Dr. Stehman, and to insure the permanency of La Vina, it has been decided to raise $200,000 by popular subscription as a Henry B. Stehman Memorial Fund. At present there is an investment in land, buildings, and equipment of more than $125,000, and the endowment fund amounts to more than $42,000.

Hospital Items.—The new San Diego County tuberculosis hospital, San Diego, which is known as the Vauclain Home, in honor of the late J. V. Vauclain, who by his will left $16,000 for the upkeep of a hospital for patients suffering from tuberculosis, was opened to receive patients, September 3.——A building has been donated to the Cottage Hospital, Santa Barbara, by George Owen Knapp, C. K. G. Billings, Clarence A. Black and Frederick P. Peabody, to be used as a clinical building by Dr. Nathaniel Bowditch Potter of the Carnegie Foundation for medical research work. The building will be two stories in height and equipped with every essential for the successful carrying out of this important work.

Personal.—Dr. Henry G. Watters, Watsonville, has resigned as assistant physician of Santa Cruz County to enter the military service.——Dr. Peter C. Remondino has been reelected president of the San Diego Board of Health. Since 1876, Dr. Remondino has been for more than twenty-one years a member of the board and is now entering on his seventh term as president.——Dr. Viola Lantz, San Jose, has started for France under the auspices of the American Red Cross.——Dr. John H. Seiffert, San Diego, who was arrested by a representative of the state board of pharmacy, September 3, on two charges of having sold cocaine to a habitual user, is said to have pleaded guilty and to have been fined $200 for each offense.

COLORADO

License Revoked.—The Colorado State Board of Medical Examiners, at a recent meeting, is reported to have revoked the license of Dr. Alfred Ephraim Max of Denver. Five other cases were dismissed. Charges reported against the physicians were for the use of drugs, malpractice and immoral conduct.

Personal.—Dr. John Smitts, Leadville, who had been charged with disloyalty and pro-Germanism, has been completely exonerated by the Delta County Council of Defense, which found the charges unwarranted and unsubstantiated.——Dr. William P. Harlow, Boulder, head of the School of Medicine of the University of Colorado, has been appointed a major in the Medical Corps, and has been placed in charge of General Hospital No. 21, Aurora.

ILLINOIS

Illegal Practitioner Fined.—Mrs. W. M. Rybicki, Chicago, is reported to have been fined $50 and costs for treating patients without having a license.

State Seals Well.—As the result of the investigation conducted in Moline by the state board of health the McGovern well has been ordered to be sealed by a lock. It has been determined by the board that this well was the source of the typhoid fever epidemic in the west end of the city.

The Prevention of Blindness.—September 6, two midwives were prosecuted before Judge Fry in the municipal court for failure to observe the requirements of the Act for the Prevention of Blindness from ophthalmia neonatorium. Both were convicted, and the minimum fine of $10 was imposed in each case, as it was their first offense. A vigorous prosecution of midwives and physicians who do not observe the requirements of the law in the care of the eyes of the newly born has been begun by Attorney-General E. J. Brundage through his assistant, Charles E. Bartlett.

KENTUCKY

Personal.—Dr. William L. Davis, Martinsburg, is said to have been taken before the United States commissioner at Glasgow, August 16, charged with making unpatriotic utterances. He was held to the federal grand jury a bond of $5,000.——Arthur L. Nelson, for four years secretary and assistant superintendent of the Louisville City Hospital, and for thirteen years connected with the institution, has resigned to accept a position with the United States Public Health Service.——Dr. Florence Meder, for eighteen years a member of the staff of state hospitals for insane in Kentucky, has resigned as second assistant physician at the Central State Hospital, Lakeland, and will engage in sanatorium work in Louisville.——Dr. Isaac D. Winston, Sturgis, is reported to be critically ill in Evansville, Ind.

State Society Meeting.—At the sixty-eighth annual meeting of the Kentucky State Medical Association, held in Louisville under the presidency of Dr. James S. Lock, Barbourville, the following officers were elected: president, Dr. John G. South, Frankfort; vice presidents, Drs. Hugh W. Gates, Calhoun, Hugh L. McLean, Wilmore, and Robert W. Frey, Trenton; secretary, Dr. Arthur T. McCormack, Bowling Green (reelected); treasurer, Dr. William B. McClure, Lexington (reelected); delegates to the American Medical Association, Drs. Daniel M. Griffith, Owensboro, and Lewis S. McMurtry, Louisville; orator in surgery, Dr. William B. Owen, Louisville; orator in medicine, Dr. Thompson F. Wickliffe, Jackson; councilor for the fifth district, Dr. Ben C. Frazier, Louisville, and councilor for the third district, Dr. William H. Neel, Bowling Green.

MARYLAND

Personal.—Lieut. Charles W. Myers, Baltimore, who has been at the front for several months, has been given the Distinguished Service Medal.——Evacuation Hospital No. 16, which is in command of Major Page Edmunds, Baltimore, has arrived safely overseas.——Capt. Frank J. Powers of Baltimore, who is connected with Evacuation Hospital No. 12, has arrived in France.

New Ward at Fort McHenry Opened.—The first of twenty-five wards recently authorized by Congress was formally opened, September 12, at the U. S. Army General Hospital No. 2, Fort McHenry. This new ward with sixteen others was started about two weeks ago. All of them are two stories in height and are built of tile. Each is arranged to accommodate at least ninety-six patients.

Board of Medical Officers Named for Unusual Duty.—Major-Gen. Jesse McI. Carter, commander of the Lafayette Division at Camp Meade, has announced the appointment of a board of three officers of the Medical Corps to "examine into, determine and report on the sanity of four soldiers accused of violating certain articles of war." The board is composed of Capts. Andrew C. Gillis, Baltimore; Theodore I. Townsend, Binghamton, N. Y., and George F. Sargent, Towson, Md. The men will be held under observation sufficiently long to enable the board to report on their mental condition.

MICHIGAN

Personal.—Dr. Worth Ross, medical supervisor for the Detroit Children's Aid Society, has been appointed a member of the American Red Cross Tuberculosis Commission to Italy.

——Dr. Charles H. Oakman, Detroit, has been appointed inspector of the House of Correction.

Drug Law Violators Punished.—"Dr." G. C. Smith, Detroit, charged with the violation of the Harrison Narcotic Law is said to have been found guilty, August 16, fined $4,000 and sentenced to imprisonment for two and one-half years in the federal penitentiary, Fort Leavenworth, Kan.——Dr. John S. Dohany, Detroit, charged with a similar violation of law, is said to have pleaded guilty and to have been fined $6,000.

Sterilization Law Unconstitutional.—The Michigan law providing for the sterilization of mental defectives or insane persons in institutions has been declared unconstitutional by the supreme court of Michigan on the ground that it is class legislation. The law provided that only those persons confined in institutions at public expense were to come within the operation of the law, and did not include all mental defectives or insane persons. The court did not pass on the constitutionality of the principle of sterilization.

MINNESOTA

Infantile Paralysis Checked.—Executive officers of the state board of health announce that there are no cases of poliomyelitis in the state excepting three cases in Minneapolis, which are believed to have been imported. He states also that the reports to the effect that there are a large number of cases in Minnesota are erroneous.

Medical Society Cares for Its Members.—In addition to its free work among soldiers and the entry of seventy-five of its members into the Medical Corps of the Army, the Hennepin County Medical Association is giving free care to the families of soldiers, and has also established a fund of $15,000 to cover the necessary expenses incurred in this care. Since the association has been doing this work, nearly 200 cases of illness among the members of soldiers' families have been treated.

Sanatorium Betterment.—A get-together meeting to formulate plans for closer cooperation between various sanatoriums of the state was held at the State Sanatorium, Walker, recently. Dr. Robinson Bosworth, St. Paul, executive secretary of the advisory commission, and representatives of nine sanatoriums were present.——A tuberculosis clinic was held at the Riverside Sanatorium, Granite Falls, September 7, by Dr. Abraham P. Terk, medical director of Riverside Sanatorium, under the auspices of the sanatorium commission.

Venereal Disease Report.—During August, 1918, 127 physicians and institutions of the state reported to the Minnesota State Board of Health on syphilis, gonorrhea and chancoid, giving the location of the disease and the source of infection, in accordance with the regulations for the reporting of venereal diseases. For the diseases, syphilis, gonorrhea and chancroid, in the order named, the numbers of cases reported from the state at large were 33, 49 and 2; for Minneapolis, 228, 95 and 5; for St. Paul, 43, 42 and 0; total, 304, 86 and 7, or a grand total for the three diseases of 497.

Tuberculosis Survey.—A survey of Roseau County for tuberculosis is being made under the auspices of the state board of health by Dr. Ray D. Gardner, Eveleth, epidemiologist of the state board of health; Dr. William H. Fortin, representing the advisory commission of the State Sanatorium for Consumptives, and a trained nurse from the health department. The work will occupy a month. An endeavor is being made to locate and examine every tuberculous individual in the county, to supervise the method of living of the individual if he remains at home, to refer him to the county sanatorium if he belong there, and to examine and exercise strict supervision over other members of the family if the tuberculous patient resides at home.

Weekly Health Journal.—The Minnesota Public Health Association has begun what is called "Experiment Number One" in the publication of a weekly journal called the *Minnesota Public Health Association Journal*, the first number of which appeared, September 5. This has followed the reorganization of the administrative staff of the association, which now operates through its board of directors of sixty members, its officers, and its executive committee of seven members. Dr. Hibbert W. Hill, St. Paul, executive secretary of the association, is editor, and he bespeaks the support of all persons in making the weekly a success. The first number contains eight pages of interesting editorials and articles, including an interview with Dr. Arthur T. Laird, Duluth, who describes in an interesting manner some features of the work in tuberculosis among French soldiers and refugees in France, where he spent eight months previous to June, 1918.

NEW YORK

Hospital Offered to Government.—The superintendent of the Albany Hospital has formally offered the institution to the government as a reconstruction hospital for crippled soldiers.

Personal.—Dr. Harold L. Palmer, who has been superintendent of the Utica General Hospital since 1899, has resigned on account of ill health. His resignation will take effect April 1, next.——Dr. William Warren Britt, Tonawanda, has been appointed secretary of the Western New York Medical Society, to succeed Dr. Lyman C. Lewis, Belmont, who has resigned to enter the military service.——Dr. William H. Murray, Albany, has been nominated as postmaster of Albany to succeed himself.——Dr. Claude R. Woods, Delhi, fractured his right arm near the wrist while cranking his motor car, August 26.——Dr. Archibald T. Banning, Mount Vernon, who had charge of the isolation hospital during the smallpox epidemic in June, has submitted a bill for services for $4,800, or at the rate of $100 a day. During the epidemic there were six cases under treatment.

New York City

New Hospital at Camp Mills.—In connection with the conversion of Camp Mills, Long Island, from a temporary to a permanent cantonment, work has been begun on a new base hospital which will furnish accommodations for 2,000 patients.

Medical Society Dissolves.—The application of the directors of the American Association of Medical Jurisprudence for dissolution has been granted by the supreme court. The society goes out of existence because of an alleged loss of interest on the part of its members. It has no creditors and no obligations.

Women Motor Ambulance Corps Reviewed.—The Women's Motor Corps of the New York Chapter of the American Red Cross, which is in charge of forty ambulances in this city, went through a stretcher drill and unit formation in Central Park, September 14. They were reviewed by the corps surgeon who highly commended the work of these volunteers.

Women Doctors Decorated.—Three women surgeons from New York have been decorated by the French government and commissioned lieutenants in the French army. They are Drs. Caroline S. Finley, Anna I. Von Sholly and Mary Lee Edward. The commissions and decorations were given for exceilent surgical work and treatment of the wounded during heavy bombardment in a hospital near the French front.

Personal.—Dr. Arnold Sturmdorf has been appointed consulting gynecologist at the Manhattan State Hospital.——Dr. Dudley H. Morris has been appointed police surgeon, to succeed Dr. Archibald Smith, Brooklyn, who has resigned.——Dr. Gustav F. Boehme, Jr., has been appointed temporary police surgeon, to succeed Dr. Edward T. Higgins, who has resigned to enter the military service.

Health Department Gives First Aid Lectures.—Dr. Royal S. Copeland, health commissioner, has arranged a series of lectures on first aid and similar topics for the employees of the health department and the public generally. The first of these lectures was delivered, September 11, the subject being "First Aid from the Fire Prevention Engineer's Viewpoint." The subject of the second lecture, September 18, in the Municipal Building, was "First Aid Resuscitation."

Pneumonia and Not Inflenza.—Pneumonia and other bronchial diseases and not the so-called Spanish influenza are said to be responsible for the illness of the majority of the persons who were reported to be ill with the disease on steamships recently arriving from England. Of eleven patients who arrived on one steamer, and who were alleged to be suffering from the disease, it was ascertained that the illness was pneumonia or bronchitis and that no indications of influenza were present.

New York Oysters Free from Typhoid.—The Merchant's Association, which for several years has been interested in preventing the sale of infected oysters, has called the attention of Health Commissioner Copeland to the need of protecting the oyster beds in the vicinity of the city. In reply Dr. Copeland has issued a statement announcing that the danger of typhoid infection by the consumption of oysters has been practically eliminated through the inspection of the oyster beds, shipment and places of sale. No case of typhoid fever has been traced to oysters in New York City so far this year.

Exposition of Chemical Industries.—The fourth national exposition of chemical industries will be held in the Grand Central Palace during the week beginning September 23.

Arrangements have been made for the display of more than 350 exhibits, and nearly all of these have a bearing in one way or another on the production of war materials. Although the federal authorities have made an agreement whereby they are to take over the Grand Central Palace within a few days, for the purpose of converting it into a war hospital, they have waived this right in view of the importance of the exposition.

Nurses Needed for Insane.—One thousand women nurses are needed in the state hospitals for the insane to replace nurses and attendants who have gone into national service. In making this announcement the State Hospital Commission calls attention to the fact that the New York State hospitals have arranged with the federal government to receive all mental cases developing in citizens of this state with the Army and Navy forces. A considerable number of such cases have already been received. The state hospitals also train male nurses, and applications are invited from men who are not available for military duty. The state hospitals also provide a shorter course of instruction in practical nursing for attendants, covering about six months. The training school classes start October 1. Further particulars and application blanks may be obtained from the State Hospital Commission, Albany.

OHIO

Personal.—Dr. William C. Heintz, Columbus, has been appointed coroner of Franklin County, to succeed Dr. Louis M. Herskowitz, who has resigned to enter the military service. ——Dr. Joseph L. Johnson, Columbus, has been nominated by the President as Minister Resident and Consul-General to Liberia.

State Laboratory Work.—More laboratory examinations for the diagnosis of syphilis are being made by the laboratory of the state department of health than for the diagnosis of any other disease. Between April 1 and September 1, 2,115 such examinations have been made. The examinations for tuberculosis amounted to nearly this number, and diphtheria ranked third.

Notification of Venereal Disease.—The regulations requiring reports on venereal disease to the state board of health became effective, July 1. During July and August notifications were received by the state department of health of 535 cases of gonorrhea and 561 cases of syphilis. In the corresponding months of last year only 181 cases of gonorrhea and 142 of syphilis were received. Physicians in many communities have not yet been aroused in aiding the health authorities in the control of venereal infection.

PENNSYLVANIA

New Hospital.—Physicians of Bethlehem have purchased the Sigma Chi Fraternity House for $25,500, and after alterations and remodeling will open the building as a city hospital.

Green Crosses on Motor Cars.—The mayor of Harrisburg has requested physicians to place a green cross on the windshield of their automobiles, to enable traffic policemen to distinguish them from other machines so that they may be granted prompt right of way.

State Society Meeting.—The Medical Society of the State of Pennsylvania will hold its annual meeting in Philadelphia, September 24 to 27, under the presidency of Dr. Walter F. Donaldson, Pittsburgh. War and the reconstruction period will be the principal topic for discussion.

Sanatorium for Incipient Cases of Tuberculosis.—The Rush Hospital for Consumption and Allied Diseases is building a new pavilion at their country branch, Malvern, for forty incipient cases. It is the intention of the board of trustees, after its completion, to offer this pavilion to the government.

Typhoid at Hastings.—The impure water situation in Hastings is believed to be responsible for forty-eight cases of typhoid fever in the town, with new cases constantly developing. Twenty-eight of these cases are under treatment at the Miner's Home Hospital, Sangler. The state inspector of health has found that house sewage is drained into one of the two springs from which the water supply of the town is derived.

Infantile Paralysis.—Infantile paralysis is said to exist in eighteen counties of the state, but no locality has assumed alarming proportion with the exception of Franklin County where there are twenty-six cases, of which fifteen cases are in the borough of Chambersburg. The local board of health has forbidden the opening of schools until the disease is under control, and has given orders to exclude all persons of less than 18 years from public gatherings.

Personal.—Dr. A. Hamilton Stewart, Indiana, deputy coroner of Indiana County, fractured his collar-bone and a rib in the overturning of his automobile, recently.——Dr. J. Frank Donehoo, Washington, has been appointed local surgeon for the Pennsylvania system, to succeed Dr. David H. Lewis, resigned.——A genito-urinary dispensary has been opened at Scranton by the state board of health, with Dr. Frank C. Garvey in charge. This is the eleventh dispensary thus far established by the state health department.——Dr. Paul G. Weston of the staff of the State Hospital, Warren, underwent operation at the Warren General Hospital, August 26, and is reported to be doing well.——Dr. Sue S. Moyer, East Pittsburgh, has been made medical officer of the Westinghouse Electric and Manufacturing Company, Pittsburgh.——Dr. Christopher H. Shearer, Reading, is reported to be seriously ill with septicemia at the Reading Hospital.

Philadelphia

Personal.—Dr. William L. Clark has been elected president of the American Electro-Therapeutic Association.——Dr. Jay F. Schamberg, professor of dermatology and syphilology, delivered the address at the opening of the ninety-fourth annual session of the Jefferson Medical College, September 23, on "Medicine—Then and Now."——Dr. Maurice Brown has been appointed assistant medical inspector of the board of health.——Drs. J. Handley, Florence M. Gottshall and Effie C. M. Paul have been appointed school medical inspectors.——Capt. William F. Guilfoyle, assistant surgeon of the 111th Infantry, has been severely gassed in France. He is now in Base Hospital No. 31 in a very serious condition.

Department of Diagnosis Formed.—Wider utilization of the science of medicine in the administration of justice, as well as in the care of probationers, has been assured in the formation of the various medical agencies of the municipal court of Philadelphia into a department of diagnosis. Dr. Charles B. Penrose is director of the department and cooperating with him are Drs. Daniel J. McCarthy, Charles S. Potts, Seymour W. D. Ludlum, John C. Da Costa, Jr., Thomas A. Shallow and James H. Baldwin. The plan is eventually to coordinate all the medical work of the court under a medical director who will devote his entire time to this service. The administration headquarters will be at the southwest corner of Twentieth and Summer streets.

WEST VIRGINIA

State Society Meeting.—The annual meeting of the West Virginia State Medical Association will be held in Martinsburg, October 1 to 3, with headquarters at the Hotel Berkeley.

Senior Student Killed.—Boyd Wallace Knight, Williamsburg, a senior student in the University of Louisville, Ky., attached to the Emergency Hospital, Nitro, was killed, August 24, in a grade-crossing accident in which a freight car backed into the hospital ambulance demolishing it and killing both the driver and the attendant.

WISCONSIN

Hospital for Merrill.—A. H. Stange has offered to donate $50,000 toward the building of a hospital at Merrill and to furnish a site providing the town will assume the care and maintenance of the institution.

Personal.—Dr. Gustave Windesheim has accepted the position of commissioner of public health of Kenosha.——Dr. Fred W. Sachse, Hartford, who was taken ill with gallstone colic, August 23, and who has been under treatment in St. Mary's Hospital, Milwaukee, is reported to be improved.

Physician Fined and Sentenced.—Dr. John G. Barnsdale, Superior, convicted, August 9, for violation of the Harrison Narcotic Law, is reported to have been found guilty of all eight counts in the indictment and to have been sentenced to imprisonment for three years in the federal penitentiary at Fort Leavenworth and to pay a fine of $6,000.

TEXAS

Antityphoid Inoculation.—The free typhoid clinic of the Public Health Service Bureau of Fort Worth has given antityphoid inoculations to more than 18,000 citizens of Fort Worth.

Personal.—Dr. David E. Rouse, San Antonio, formerly field director for the Texas Board of Health has been appointed public health officer for Des Moines, succeeding Dr. William C. Witte.——Dr. Nelson O. Brenizer, Austin, has been commissioned major in the M. C., Texas N. G., and has been

assigned to duty with the Eighth Regiment.——Dr. William Hale, Jr., Dallas, has been appointed health officer of Dallas County to succeed Dr. Taylor C. Gilbert, who has resigned to enter the military service.——Dr. Tristram B. Hamer, Richardson, was seriously injured by the overturning of his automobile and is under treatment at St. Paul Sanitarium, Dallas.——Dr. Oscar Davis, Anderson, has been appointed assistant health officer to succeed Dr. Addeson L. Lincecum, who has resigned to enter the military service.——Dr. William W. Greer, Cameron, has been appointed assistant physician at the Austin State Hospital.

CANADA

New Officers.—Dr. George H. Murphy, Halifax, N. S., has been elected president of the Medical Society of Nova Scotia, and Dr. James R. Corston, Halifax, has been reelected secretary-treasurer.——The Medical Council of Canada has elected the following officers: president, Dr. R. Eden Walker, New Westminister, B. C.; vice president, Dr. James C. Connell, Kingston, Ont., and registrar, Dr. Robert H. W. Powell, Ottawa (reelected).

Personal.—Prof. Louis de L. Harwood, Montreal, has been appointed dean of the medical department of Laval University. ——Dr. Frederick A. Cleland, Toronto, is going with the Canadian forces to Siberia.——Dr. Harry B. Anderson, Toronto, has been appointed by the Hon. Dr. Cody, minister of education for Ontario, chief medical referee for the Ontario Branch of the Inspectors' and Teachers' Superannuation Fund Commission.——Capt. T. Harold Crews, Woodstock, has been transferred from the Imperial Army to the C. A. M. C., owing to the great demand in Canada for returned medical men with overseas experience. He has just returned to Canada from France.

Public Health.—Dr. Willis B. Moore, Kentville, N. S., has been elected president of the Association of Medical Officers of Nova Scotia. Despite the absence of the many physicians who are in active service, the attendance at the annual meeting was a success.——Venereal control in the Halifax Military District will be under the care of a cooperative committee. Capt. William H. Hattie, M. O. H., Halifax, N. S., will be the chairman. It is said that the venereal incidence in enlisted men is now very small in that district, but in those just called to service numerous cases of infection have revealed themselves.——The seventh annual convention of the public health services of the province of Quebec was recently held in Quebec City. Industrial hygiene and public health in the province of Quebec, venereal diseases, tuberculosis, and other similar questions were fully discussed.

Hospital News.—Notre Dame Hospital, Montreal, has been conducting a relief fund campaign. The result totaled $267,153.50. The directors of the hospital subscribed $10,000; and as the fund amounted to more than $150,000, Sir Rodolphe Forget will give $100,000.——British Columbia hospitals held their first convention during the past month. Practically all of the seventy-two hospitals in that province sent delegates. Dr. C. H. Gatewood gave the opening address, and Dr. Malcolm T. MacEachern, superintendent of the Vancouver General Hospital, gave the address to the delegates. Many subjects of interest to hospitals were discussed.——Lieut. E. R. Rutherford, M. C., Ottawa, is now commandant of Mowat Hospital, Kingston, Ont. The hospital is under the Soldiers' Civil Re-Establishment Commission.——Dry Island, near Morrisburg, Ont., owned by a New York millionaire, Mr. J. W. Corrigan, will likely be accepted by the Militia Department of Canada for use for convalescent soldiers. It is said to be well adapted for hospital purposes.

GENERAL

Tuberculosis Conference.—The sixth annual meeting of the Mississippi Valley Conference on Tuberculosis will be held at the Planters Hotel, St. Louis, October 2 to 4.

Information Concerning Women in Industry.—The Pennsylvania Department of Labor and Industry is circulating a questionnaire among industrial physicians in order to secure adequate data on employment of women in industry due to the war emergency. Copies of this questionnaire may be secured by addressing the chief of the Division of Industrial Hygiene and Engineering, Francis D. Patterson, Third and North streets, Harrisburg.

Cumberland Valley Medical Association.—The sixteenth annual meeting of the Cumberland Valley Medical Association was held at Waynesboro, Pa., September 5, and the following officers were elected: president, Dr. Jeptha E. Pitsnogle, Hagerstown, Md.; vice presidents, Drs. William D. Campbell, Hagerstown, Md., Samuel E. Mowrey, Mechanicsburg, Pa., and David F. Unger, Mercersburg, Pa.; secretary, Dr. John J. Coffman, Scotland, Pa. (reelected), and treasurer, Dr. John C. Gilland, Greencastle, Pa.

Sanitation and Housing.—The Committee on Welfare Work of the Committee on Labor, Council of National Defense, has made a report on village and public sanitation, which is published in *Public Health Reports*, Sept. 6, 1918. The committee consists of Dr. George M. Kober, Dr. John W. Kerr, Lawrence Veiller, Charles H. Verrill and Dr. William C. Woodward. This report, which is illustrated by plans and pictures, contains much valuable and practical information with reference to the housing and sanitation of rural workmen's areas. It should prove especially useful as a textbook for beginners in welfare supervision. The details set forth in the report should serve as a guide to executives in welfare work who have not specialized in rural sanitation.

Army Medical Experts Speak.—At a meeting of the American Academy of Political and Social Science at Philadelphia, September 20 and 21, rehabilitation of the wounded was discussed and the speakers included Dr. William W. Keen, Lieut.-Cols. Charles W. Richardson, Harry E. Mock, and James Bordley, Jr., M. C., U. S. Army, James P. Munroe, vice chairman of the federal board for vocational instruction; Brig.-Gen. Robert E. Noble, Major J. D. Todd, board of pension commissioners for Canada; T. B. Kidner, vocational secretary, invalided soldiers commissioner of Canada; Wallace Buttrick, president of the New York general education board; Douglas C. McMurtrie, director of Red Cross Institute for Crippled and Disabled Men; Michael J. Dowling, president of the Olivia State Bank, Minnesota, and James C. Miller of the federal board for vocational education.

Bequests and Donations.—The following bequests and donations have recently been announced:

Society for the Relief of the Destitute Blind, and Post-Graduate Hospital, New York City, $10,000; New York Eye and Ear Infirmary, New York Society for the Relief of Widows and Orphans of Medical Men, and Tuxedo Home, Tuxedo Park, N. Y., each $5,000 by the will of Marie Louise Tillotson.

Rush Hospital for Consumptives and Allied Diseases, Philadelphia, $10,000; and Children's Seashore Home, Atlantic City, N. J., $2,500, $1,000 of which is to be used endowing a free bed in the home, and $1,500 to endow a room for a woman and child, by the will of Annie Fassitt.

For the endowment of a bed in a hospital as a memorial to her mother and father, a dwelling located on Henley Street, Philadelphia, a small savings accumulation, a railway bond for $1,000, a $50 Liberty Loan bond and fifteen shares in a building and loan association, by the will of L. E. Koenig.

New York Physician's Mutual Aid Association, $500 by the will of Dr. Sidney L. Spiegelberg, New York City, who died recently in France.

Child Labor Bill.—Representative Keating of Colorado has introduced in Congress a bill, H. R. 12,767, to take the place of the federal child labor bill recently declared unconstitutional by a close decision of the United State Supreme Court. The bill was prepared by the National Child Labor Committee and the American Federation of Labor, and has the endorsement of President Wilson. The bill, it is said, embodies the standards of the old law very closely, prohibiting the labor of children of less than 14 years at any time, of children between the ages of 14 and 16 years for more than eight hours a day or at night in factories, and of children of less than 16 years in mines and quarries. The new law is based on the war power of Congress of conserving the man power of the nation, while the old law was based on the power of Congress to regulate interestate commerce. This bill, if it becomes a law, will prohibit the employment of children during the war and for a period of six months thereafter. It is said that the friends of federal protection for children are preparing a measure intended to be a permanent successor to the bill just introduced.

No Red Cross Seal Campaign.—According to the *Bulletin of the National Tuberculosis Association* for September a new form of financing tuberculosis work for the coming year has been arranged between the National Association and the Red Cross, by which the Red Cross Christmas Seal Campaign will be abandoned. This has been done in deference to the wishes of President Wilson and the Council of National Defense. The new plan of raising money for the Tuberculosis Campaign is to be by grant from the Red Cross amounting to $2,500,000, and the money is to be raised in a joint campaign for a universal Red Cross membership to be known as the Christmas Roll Call. An attempt will be made this fall to

make this membership in the Red Cross as nearly universal as possible. The National Tuberculosis Association has been designated by the Red Cross as the agency through which the $2,500,000 fund will be distributed, and each state will be given as minimum an amount equal to the gross sale of Christmas seals for 1917. The Red Cross Christmas seal is still to be a distinctive feature, however, and each subscribing member is to be given a special packet containing educational literature on tuberculosis and ten Red Cross seals.

American Association for the Study and Prevention of Infant Mortality.—The report of the eighth annual meeting of the association, which was held in Richmond in 1917, is now being distributed. It is a volume of 327 pages divided into four parts, relating to pediatrics and obstetrics; eugenics and vital and social statistics and public school education; rural communities, nursing and social work and propaganda, and the reports of affiliated societies, with membership list and index. The articles, reports and discussions have been influenced largely in their welfare aspects by the war, and have increased significance and importance on that account. Some of them describe legislative and other governmental action of the allied countries, as well as of our own country, relating to infant welfare, and the work of the Children's Bureau and the other Red Cross activities in Paris, France, and Italy. The tone of the meeting throughout emphasizes more strongly than ever the extreme importance of the welfare of our future citizens on account of conditions brought about and to be brought about by the war. The volume should have a wide distribution. It may be obtained for $3 from Gertrude B. Knipp, executive secretary of the association, 1211 Cathedral Street, Baltimore.

BUENOS AIRES LETTER

BUENOS AIRES, Aug. 6, 1918.

Special Conference on Plague

The Sociedad de Higiene, Microbiologia y Patologia recently devoted a special session to study of plague in Argentina. Since this disease was introduced in 1899 there have been cases from time to time, but these were as a rule not very serious. The results obtained with antiplague serotherapy throughout the country have been good. Between 1900 and 1905 there were 204 cases thus treated, with 14.2 per cent. mortality. From 1905 to 1912 there were 664 cases, with 12.5 per cent. mortality. The highest death rate from plague was in 1906, amounting to 23 per cent., the lowest in 1912, with 7.3 per cent. mortality. The treatment employed was that which Penna has been advocating since 1900, which consists in a daily injection of 100 c.c. of antiplague serum, by the vein, until recovery. The results obtained with serums made from living bacilli do not seem to be any better than those realized with killed bacilli; with the latter, for instance, in 232 cases, 7.8 per cent. terminated fatally. There were only six cases of fulminating pneumonic plague. Bacteriologic examination gave positive findings only in from 12 to 16 per cent. of all the cases, but in the latest series, in 34 per cent. The examinations were made by puncture of ganglia or by biopsy. It was demonstrated that the focus for the cases observed was in certain zones of the port, and this emphasizes the necessity for intensifying the campaign of destruction against rats until the disease is stamped out. Occasionally foci of plague have appeared in the interior of the country. Some of the cases were of the grave pneumonic type, but these foci were readily brought under control and the disease never spread.

Death of Professor Ayerza

Dr. Abel Ayerza, professor of clinical medicine at the Facultad de Medicina of Buenos Aires succumbed recently to a brief illness. He was known especially for his study of *Cardiacos negros*. He gave this name to patients who developed progressive cyanosis in the course of chronic bronchitis or emphysema, and finally presented phenomena of asystole. Necropsy generally revealed lesions of sclerosis in the pulmonary artery. His latest work was on endemic regional chronic arsenic poisoning.

Pneumonia in Northern Argentina

Fibrinous lobar pneumonia has a very low death rate in most of the country, but in the northern provinces the death rate from it is high, reaching 20 or 30 per cent. As a number of cases have occurred recently in the 20th regiment, in garrison at Jujuy, the Departamento Nacional de Higiene decided to send a commission to study the disease on the spot, under the leadership of Professor Kraus.

Public Health Service Sends Commission to Study Epidemics

The commission sent by the National Public Health Service to study epidemic diseases in northern Argentina is under the leadership of Professor Kraus, director of the Instituto Nacional Bacteriologico. The other members of the commission are Drs. de la Vega, Battaglia, Barbara, and Fischer, with several bacteriologists, *guardas sanitarios* and attendants. The epidemic of pneumonia at Jujuy has almost completely died out, but the mortality reached 30 per cent.

In the Galpon and Molinos districts there have been cases suspicious of bubonic plague and the commission is to investigate these foci. A large squadron is equipped for rat destruction at these places.

The main interest for the expedition, however, is the investigation of typhus, for exanthematous typhus has never been reported before in Argentina. The suspicious cases which the commission is to study have occurred at Iruya, near the frontier of Bolivia, in a poor, mountainous zone with little communication with the outside.

South American Conference on Hygiene, Microbiology and Pathology

The committee of organization for this approaching scientific gathering, to be presided over by Professor Couto, has decided on Rio de Janeiro for the inaugural session. It will convene Oct. 15, 1918. The previous meeting was held at Buenos Aires in September, 1916, and the works presented have been published in a volume. All the South American countries have been invited to the approaching conference.

Reform in the Statutes of the State Universities

The movement for reform in the management of the universities, for which the professors and students of the universites have been keeping up an agitation, has culminated in a bill presented by the president of the republic to congress for deliberation and action. The bill coincides in general with the demands of those contending for reforms. It provides that the dean shall be elected by the professors, he shall serve four years and cannot succeed himself. The election will be by a council of seven members, one representing the professors, one the students, one the alumni, and the others the professors. A time limit for service is imposed, and the subject of free lectureships, the *docencia libre*, is to be regulated.

Gliosis of the Retina

In the June issue of the *Revista de la Asociacion Medica Argentina*, Dr. R. Argañaraz calls attention to the fact that the disease known as diffuse teleangiectatic gliosis of the retina was described by Dr. P. Lagleyze in the *Revista Argentina de Oftalmologia practica*, 1883, **1**, 3. His communication was accompanied by a colored plate. The disease is credited, as a rule, now to von Hippel.

Ozena

The microbe described by Perez as the causal agent of ozena was studied four or five years ago by Hoffer of Vienna. He confirmed the characteristic fetid odor of the cultures of this germ, and after intravenous injection in rabbits, refound the germ in the nostrils of the rabbits. Some of the animals presented thereafter atrophy of the turbinates, and all showed an intense congestive reaction in the turbinates.

On the basis of these researches, Dr. S. Mazza in Buenos Aires has been experimenting with vaccination against ozena. The first results seemed to have been good as the odor disappeared, the amount of crusts seemed much reduced, and some of the patients were cured. In 1916, Dr. Perez repeated his early experiments, but although the turbinates in the rabbits showed intense congestion after intravenous injection of cultures of his microbe, he was unable to detect any atrophy of the turbinates. Trophic lesions developed in the ears, but these, of course, are not specific. Dr. Perez, and later Dr. Zanolli, isolated from the nasal fossas of ozena patients a certain number of germs with similar cultural characteristics, fetid odor, etc., but they could all be distinctly differentiated. They called these germs para-ozena microorganisms.

Repeated tests of vaccine therapy by means of Perez' microbe resulted in a very limited number of cures, and the improvement noted in other cases proved briefly transient, even when such large doses were injected that congestion and epistaxis followed.

Taking into account that Perez' microbe is found only in a small percentage of ozena patients, and that the nasal reac-

tion in the rabbits can be obtained with other micro-organisms, it seems difficult, to date, to assign formal importance to this bacterium as the causal agent of ozena.

As to vaccine therapy, it would be better to try it on a large scale with not only the Perez microbe but with the paraozenous and other bacteria encountered in ozena.

LIMA LETTER

Lima, Peru, Aug. 24, 1918.

Influenza in Peru

The famous "Spanish grip" has been manifesting itself in some of the mining districts of the interior. The principal centers of the epidemic have been at Smelter, Cerro de Pasco and Morococha, important mining centers in the hands of powerful North American companies. The epidemic was so general that the mining and smelting works had to be shut down. More than 5,000 presented the disease, but the mortality reached only 0.75 per cent.

Bubonic Plague in Peru

There seems to be a recrudescence of bubonic plague along the coast, principally in Callao and Trujillo. There have been a total of 11,905 cases of bubonic plague in Peru since 1902, with 6,156 deaths. They were all in the coast provinces, and the largest numbers of cases, 4,444, and 2,176 were in the northern province of which Trujillo is the capital, and in the Lima province, but none of the coast provinces were entirely exempt. From a total of 172 cases in 1903, the numbers progressively increased to 1,169 and 1,700 in 1907 and 1908, and then gradually decreased to 892 in 1912, and since then to 444 in 1917, the mortality keeping very close to 50 per cent. each year.

Infant Welfare Work in Peru

Parliament is deliberating at present on more comprehensive legislation for protection of infants. The prevailing opinion is in favor of creating a fiscal fund to provide an income which will be distributed among the public institutions of the country, run by the Beneficencia publica, for the purpose of establishing "dispensaries for infants," on the type of the "Drop of Milk" stations. Half a million soles (about $250,000) is to be set apart for this object.

Scarcity of Drugs

As a consequence of the scarcity of drugs, determined by the war, the lack of medicines has begun to be appreciably felt at Lima and elsewhere throughout Peru. The infant industry of drugs "made in Japan" is taking advantage of the opportunity to conquer the place, and at present many products are coming from Japan which formerly used to come from Europe and even from the United States. Among them are quinin, the salicylates and benzoates, glycerin, and many more. There is a recrudescence of malaria along almost the entire coast and the price of quinin is so high that arrangements should be made to render this product more easily procurable.

LONDON LETTER

London, Aug. 20, 1918.

Influenza Epidemics

The influenza epidemic described in recent letters has completely disappeared. The health officer to the London County Council, Dr. Hamer, in his annual report deals with the influenza epidemics of the past. He points out that ever since the institution of registration, influenza, bronchitis and pneumonia as causes of death have shown increases from time to time, as though in response to the stimulus of an epidemic influence; in other words, the great influenza outbreak of 1847-1848; the succeeding minor prevalences of 1851, 1855, 1858, 1862-1863, 1869 and 1875; the following pandemic of 1890, with the subsequent epidemic waves of 1891, 1892, 1895, and 1900, and the lesser waves of 1908-1909 and of more recent years have all been accompanied by an increase in the number of deaths returned as due to bronchitis and pneumonia. In addition to the well-known type with respiratory complications, influenza has presented from time to time gastro-intestinal and nervous types, and during recent years, in London, the welling up in each first quarter of the year of deaths attributed to influenza and to respiratory diseases has been accompanied by a corresponding increase in the number of deaths ascribed to cerebrospinal fever. There has been apparent in London for some years past an approximation or merging into one another of the prevalences of illness attributed in the earlier months of each year to cerebrospinal fever and later in the summer months diagnosed as poliomyelitis. The question thus arose and has been discussed in the annual reports for 1914, 1915 and 1916, as to the need from an epidemiologic point of view for associating the prevalence of influenza not only with illness in which respiratory and gastro-intestinal complications are present, but also with illnesses in which disturbances affecting the central nervous system predominate. It has, in fact, become apparent that it is now necessary to consider the desirability of enlarging the present connotation of the term "influenza." Dr. Hamer is inclined to attribute to influenza the recent epidemic of acute encephalitis (The Journal, June 22, 1918, p. 1963); but the view advocated by Prof. Arnold Netter given in the Paris letter (p. 1964) has been gaining ground: that this epidemic is a new disease in this country, though previous outbreaks, such as that in Italy in 1890, have been recorded.

Australian Fund for Physicians Disabled in the War

The Australian branches of the British Medical Association are considering how to raise a fund to assist the dependents of members who become disabled or who are killed on active service, and also to assist the disabled members themselves. The results of the war so far have shown that the majority of physicians return to their practices without grave disability. But they have suffered large pecuniary loss by leaving, and many have had difficulty in reinstating themselves. The loss of the men who have become disabled is, of course, a very different one. It is estimated that about 1,000 Australian physicians have joined the army. The number killed exceeds sixty. Of those who have received incapacitating wounds, no figures are at present available. It seems that when the mortality of men serving in the field is high the disablement rate is low. It has been suggested that each member of the British Medical Association in Australia be asked to contribute $75 a year for three years. If 2,000 physicians would contribute this amount, the fund would be large enough to place $1,500 at the disposal of 100 men, and the interest payable would provide $500 a year for fifteen disabled men or the widows of men who have been killed.

Colored Physicians and the War

One of the effects of the war has been a great increase in two classes of physicians that previously formed only a small minority of practitioners—women, and foreigners of various kinds, including colored persons. Owing to the great shortage of British physicians, a considerable proportion of the resident staff of the hospitals are Indians or other persons of color. A recent appointment is that of Miss Martha Hunter Hoa Hing, a Chinese medical woman, who has been chosen house surgeon at the Alexandra Hospital for Children, Brighton. Miss Hoa Hing has been in England for seven years, and has a brother in the British army. She took the diplomas L.R.C.P., and L.R.C.S., Edinburgh, and L.R.F.P.S., Glasgow, in 1916. The circumstances in which institutions now find themselves when a vacancy on the medical staff arises is typified by the case of Shoreditch, a London borough. In answer to their recent advertisement for an assistant medical officer, all the applications received, apart from a Chinese, were from colored medical men.

Allied Food Plans

The committee of representatives recently established by the Inter-Allied Food Council (consisting of the food controllers of France, Italy, the United Kingdom and the United States) is thus constituted: chairman, Sir John Beale, United Kingdom; Major the Hon. W. Astor, M.P., and Mr. W. H. Beveridge, C.B., and Capt. J. R. Brooke; United States, Mr. J. P. Cotton and Mr. L. P. Sheldon and Mr. G. S. Jackson; France, Major R. Fillioux, M. Genestal and M. Destombes; Italy, Commendatore Professor Attolico, C.B., Signor Nimmo and Lieut. Amadio. The secretary is Mr. Franklyn L. Turner, C.B., and the offices are at Trafalgar House, Waterloo Place, London, S. W. This committee may be regarded as one of the first fruits of Mr. Hoover's recent visit to London. The whole question was thoroughly discussed at the conference of the Allied food controllers, and the result has been the setting up of an organization to provide for more coordination in securing the food supplies of this country and our European allies. Instead of isolated methods of purchase for each individual country, without regard to the requirements of its neighbors, one general program of purchase and importation for all the countries will be evolved which will

take into account on one side the needs and home production of each country and, on the other, shipping facilities, financial arrangements and the actual supplies of food likely to be available for export to Europe. Executives representing France, Italy, the United Kingdom and the United States were already in existence for the purpose of scheduling the Allied requirements of the principal foodstuffs, such as cereals, meat and fats, oils and oil seeds, and sugar. These executive organizations will remain, but they are now placed under the control of the new committee of representatives, which will coordinate the different programs into one general scheme and will be responsible for carrying it into effect.

Bubonic Plague in the Thames

The steamship *Hector* arrived at Gravesend from Calcutta with four members of the crew suffering from bubonic plague. Another member of the crew is ill, but the nature of his illness has not yet been determined. All the patients have been removed to the London Port Sanitary Authority's Isolation Hospital at Denton. Several dead rats had been found in a store room on the ship during the voyage. The crew has been temporarily removed from the vessel, the quarters fumigated, and all clothing and bedding have been disinfected. The vessel will be disinfected, all rats destroyed, and the cargo discharged into lighters under supervision of the health officer of the Port of London Sanitary Authority.

The Canadian War Museum

The opening of the war museum at the Royal College of Surgeons was described in THE JOURNAL, Nov. 10, 1917, p. 133. A section belonging to the Canadian Army Medical Corps has been opened by Sir Robert Borden, prime minister of Canada. Sir George Makins, president of the Royal College of Surgeons, in welcoming Sir Robert, said that at the beginning of the war they were very ignorant of the kind of injuries they would have to treat, as collections and drawings had not been kept in earlier wars. The government had taken an interest in this matter, and the army medical collection of war specimens had been arranged by the conservator, Prof. Arthur Keith, with the assistance of Prof. S. G. Shattock and Mr. Cecil Beadles. They had now a record of this war which would be of the greatest assistance to the army medical corps. It was intended that Canada should possess an equally representative collection.

Sir Robert Borden said we should not fulfil our duty in the war without gathering its lessons in surgery. He had observed three years ago that in British and French hospitals very careful case records were kept, which would be of great future service to the medical profession. In the collection he had inspected that day he saw these records in another form. It was a source of great gratification that the Canadian Army Medical Service had been of such assistance. The matter had been brought to his attention about a year ago, and the Canadian government had encouraged this work. He was glad to know that at the end of the war Canada would have as good a collection as the whole war museum he was now inspecting.

PARIS LETTER

PARIS, Aug. 8, 1918.

Antitoxic Serum for Gas Gangrene

A very interesting discussion was held on this subject at a recent meeting of the Société de chirurgie de Paris. Drs. Pierre Duval and E. Vaucher cited the results which they obtained from the use of serums prepared by Weinberg and Séguin: antiperfringens serum; antiedematiens serum, and antivibrion septique serum. These serums were used for the first time in 1917 in fifty cases. Of these fifty patients, twenty-five died within the first twenty-four hours after being wounded as the result of severe multiple wounds, but without presenting any signs or symptoms of gas bacillus infection. The remaining twenty-five patients lived and were watched for from eight days to four weeks. When they left the sanitary formation, all danger of gas bacillus infection was passed. As a rule, the serum was injected in from five to six hours after the wounding; sometimes more time elapsed. The serum was administered in 10 c.c. doses.

After the last battle in Flanders, Duval and Vaucher injected thirty-seven wounded soldiers. These men were seen not later than six hours after being wounded, and they were at once given an injection of from 30 to 100 c.c. of a mixture of equal parts of the three serums mentioned above. On the basis of their experience, Duval and Vaucher are convinced that this prophylactic treatment is wholly justifiable. The injections should be made as soon as possible after the wound. The injections should not be made at the level of the traumatized muscles (because these muscles are no longer vascularized, hence the serum cannot penetrate them), and serum therapy never should take the place of or delay surgical treatment of the wound. It seems advisable that prophylactic serum therapy should be adopted in the army; the preventive injections of mixed serums should be given at the *postes de triage* in the same manner as antitetanus inpections are given.

Dr. Pierre Delbet reported a case in which the use of an antigangrene curative serum was followed by a cure. The soldier reached Delbet's service twenty-four hours after being wounded, with the gas gangrene fully developed (toxic form) in one of his arms. Prophylactic serotherapy is still more effective. Its use has been interfered with, however, by a series of quarrels among the laboratories and because of poor technic.

Dr. L. Bazy insisted on the difficulty of making a bacteriologic diagnosis at the time. It is a lengthy procedure but, nevertheless, a necessary one as clinical differentiation of the various forms of gas gangrene is impossible as yet. The result is that in order to make serotherapy effective, a serum must be used which contains the antitoxins of all the bacteria which may be the cause of gas gangrene. As a matter of fact, it is sufficient to consider only the principal causes of gas gangrene, namely, the vibrion septique and the perfringens, making a mixture of these two serums. The action of such a serum would be still stronger if there could be added to it antipyogenic serums, especially antistreptococcus serum, because these pyogenic organisms create conditions in the wound which are favorable to the subsequent development of gas gangrene. It is this idea which led Leclainche and Vallée to make their polyvalent serum.

Interallied Medical Society at Tours

An interallied medical *cercle* has been formed at Tours. The first meeting was held July 9.

Canadian Mission in France

A mission headed by Colonel Combe and Dr. Lure has been sent to France by the Canadian government for the purpose of studying the measures that have been taken in reconstruction work among the maimed and the invalided.

Cultivation of Medicinal Plants

The *Comité des plantes médicinales* recently visited the places where medicinal plants are grown and prepared for pharmaceutical use. At the farm de Vintre, near Etrechy, and at Milly (departement de Seine-et-Oise) the committee, under the direction of M. Gabriel Bertrand, professor in the Faculté des Sciences de Paris, saw most interesting experimental cultivations, testifying to the remarkable efforts made by French scientists and scientifically trained agriculturists to free France from the quasi-monopoly which the enemy had arrogated to itself before the war. New centers of cultivation, created in the abandoned territory, are in process of organization, some in the central region, others in the southwest.

Bombardment of an American Hospital

The hospital of the American Red Cross at Jouy-sur-Morin (departement de Seine-et-Marne) was bombarded, July 15. Two men attached to the sanitary service were killed; nine persons were injured.

The Milk Supply

In order to assure a sufficient supply of fresh milk for the civil population, especially the children, the old and the sick, during the coming winter, M. V. Boret, minister of agriculture and food commissioner, has taken certain measures. The shortage of milk is due almost entirely to the intensive production by the industries which transform milk to some other product, such as butter, concentrated milk, cheese, etc. The cheese manufacturers have not ceased to extend their production, using more and more milk all the time, thus sending the prices higher and higher for a food of prime necessity. It seems inevitable that the cheese-making industry must be regulated in order to conserve the supply of fresh milk and to keep the price within normal limits. Therefore, M. Boret has asked the prefects to advise him of the quantity of milk that is needed by each *centre de consommation*, those which seem to be assured for the next winter, and those which must be provided for by the limitation of the use of milk by the local factories.

Marriages

LIEUT. EARLE CERENIUS WINSOR, M. C., U. S. Army, Rockwell's Mills, N. Y., on duty at Barron Field, Fort Worth, Texas, to Miss Savalla O. Cornell, also of Rockwells Mills, July 20.

GEORGE WILLIAM HAWK, Sayre, Pa., to Miss Helen Victoria Brown, at Tilsonburg, Ont., July 29.

PERRY H. WESSEL to Miss Vera May Cooper, both of Moline, Ill., September 4.

Deaths

Meyer L. Heidingsfeld, Cincinnati; Medical College of Ohio, Cincinnati, 1895; aged 46; a Fellow of the American Medical Association; and secretary of the Section on Cutaneous Medicine and Surgery in 1907; formerly president of the Cincinnati Society for Medical Research, and chairman of the Dermatological Section of the Ohio State Medical Association; a member of the Mississippi Valley Medical Association; professor of dermatology and syphilis in the University of Cincinnati; dermatologist and head of the department in the Cincinnati General and Jewish hospitals; died in the Jewish Hospital, Cincinnati, September 3, from abscess of the spleen following typhoid fever.

Emmanuel Persiliar Lachapelle, Montreal, who died last month, aged 73, was dean of the medical department of Laval University, and also president of the board of public health for the province of Quebec since its organization in 1887. He was a graduate of the University of Victoria College, Coburg, Ont., in 1869; took an active part in the organization of the profession in his district and was one of the founders and editors of the *Union Médicale du Canada.* In 1894 he was elected president of the American Public Health Association, and was the representative from Canada at various international medical congresses.

John Dallas Erdman, Allentown, Pa.; University of Pennsylvania, Philadelphia, 1872; aged 68; at one time a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; at one time president of the Lehigh County Medical Society; president of the Allentown school district, and later of the board of education; died in the Sacred Heart Hospital, Allentown, September 6, from injuries received by being run down by an automobile, August 27.

Capt. Hoddie Wilbur Daniels, M. R. C., U. S. Army, Elkins, W. Va.; Baltimore Medical College, 1894; aged 46; a Fellow of the American Medical Association; for eleven years a member of the city council of Elkins, and health commissioner of the city; a specialist in anesthesia; who was on duty on the Western Front is reported to have been killed in action.

Capt. Samuel Oscar Brumbaugh, M. R. C., U. S. Army, Huntingdon, Pa.; University of Pennsylvania, Philadelphia, 1886; aged 53; a Fellow of the American Medical Association; is reported to have committed suicide in the office of a physician in Baltimore, September 6, by severing an artery in the wrist.

Edmund Townsend, Fairport, N. Y.; University of Buffalo, N. Y., 1885; aged 57; recently a surgeon on a steamer in the merchant service; who was operated on at the Primrose Hospital, Batavia, N. Y., in the early spring; died in Washington, D. C., September 4, from carcinoma of the stomach.

James Robert Ware, Greenville, S. C.; Jefferson Medical College, 1895; aged 45; at one time a Fellow of the American Medical Association; a member of the South Carolina Medical Association; for two terms a member of the city council; died at his home, September 1.

Peter Byrnes, Chicago; Jenner Medical College, Chicago, 1906; aged 58; formerly a member of the Illinois State Medical Society; at one time a member of the staff of St. Elizabeth's Hospital; died on a street car in Chicago, September 11, from cerebral hemorrhage.

Edward B. Weston, Chicago; Rush Medical College, 1873; aged 72; for many years well known as a practitioner of Chicago, and head of the local archery association; died in the Home for Incurables, Chicago, September 14, from chronic interstitial nephritis.

Leon L. Love, Tacoma, Wash.; Missouri Medical College, St. Louis, 1888; aged 62; a Fellow of the American Medical Association; and in 1912 president of the Washington State Medical Association; once health officer of Tacoma; died at his home, September 1.

Harry S. Kiskadden, Detroit; College of Physicians and Surgeons, Chicago, 1885; aged 61; who was seriously injured in an automobile accident at French Landing, August 30; died from his injuries at Bayers Hospital, Ypsilanti, Mich., September 2.

Aaron Shelmon Warner, Baltimore; College of Physicians and Surgeons, Baltimore, 1881; aged 62; once coroner of the twelfth district of Baltimore; died at his home in Highlandtown, Baltimore, September 5, from tuberculosis of the spine.

John Aloysius Chard, Jersey City, N. J.; New York University, New York City, 1897; aged 54; a member of the Medical Society of New Jersey; physician to the City and German hospitals, Jersey City; died at his home, August 31.

Anne Wilson Nixon, Pasadena, Calif.; Cooper Medical College, San Francisco, 1892; aged 76; a Fellow of the American Medical Association; formerly physician to the Hollenbeck Home, Los Angeles; died at her home, recently.

Edward L. Carlton, Columbus, Ohio; Starling Medical College, Columbus, Ohio, 1865; aged 79; a member of the Ohio State Medical Association, and a veteran of the Civil War; died at his home, September 5, from heart disease.

Horace Lester Kutchin, Columbus, Ohio; University of Tennessee, Nashville, 1884; Rush Medical College, 1886; aged 62; died in Mount Carmel Hospital, Mount Gilead, Ohio, September 2, after a surgical operation.

G. J. Stapleton, Lockney, Texas; Memphis (Tenn.) Hospital Medical College, 1889; a member of the State Medical Association of Texas; died in Lockney, September 2, after a surgical operation.

Fletcher Armitage Gary, Vernon, N. Y.; Detroit Medical College, 1870; aged 71; for three terms president of the village of Vernon and for several years school trustee; died at his home, August 30.

Franklin T. Beattie, San Ana, Calif.; formerly of Shushan, N. Y.; University of Vermont, Burlington, 1887; a member of the Medical Society of the State of New York; died at his home, August 18.

John Lephakis, San Francisco; National University, Athens, Greece, 1899; aged 40; was found dead from a gunshot wound of the head, August 30, on a road between San Mateo and Half Moon Bay.

Joseph B. Johnston, Graniteville, R. I.; Baltimore Medical College, 1896; aged 58; health officer of Johnston, R. I.; for many years a druggist of Providence; died at his home, about September 3.

Carl Wagner, Milwaukee; University of Würzburg, Germany, 1892; aged 53; a Fellow of the American Medical Association; died suddenly in Chicago, August 30, from heart disease.

Willets S. Cossitt, Detroit; Wisconsin College of Physicians and Surgeons, Milwaukee, 1896; aged 59; died in a street car in Detroit, August 25, from acute dilatation of the heart.

Oscar C. Whitacre, Springfield, Ohio; Eclectic Medical Institute, Cincinnati, 1896; aged 61; died in Springfield, August 26, from cerebral hemorrhage.

Chapman W. Jones, Appomattox, Va.; College of Physicians and Surgeons, Baltimore, 1894; aged 49; died in Greensboro, N. C., August 23, from diabetes.

Belmont W. McBee, Paw Paw, W. Va.; University of Louisville, Ky., 1894; aged 52; died at his home, about August 18, from peritonitis.

James Thomas Gault, Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1898; aged 41; died in Atlanta, August 23.

T. P. Johnston, Everton, Ark. (license, Arkansas, 1903); aged 60; died at his home, September 2, from cerebral hemorrhage.

Maria Vincent Maxwell Scollay, Brooklyn; Eclectic Medical College of the City of New York, 1896; died, September 3.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

CAMPETRODIN AND CAMPETRODIN NO. 2

Report of the Council on Pharmacy and Chemistry

The following report on Campetrodin and Campetrodin No. 2 has been adopted by the Council and its publication authorized.

W. A. PUCKNER, Secretary.

The following report of the A. M. A. Chemical Laboratory on "Campetrodin" and "Campetrodin No. 2," sold by the A. H. Robins Company, Richmond, Va., was submitted to the Council by a referee of the Committee on Pharmacology:

Campetrodin and Campetrodin No. 2, Double Strength, are called "ethical medicinal specialties" by the A. H. Robins Company, Richmond, Va., which sells them. An advertisement in the *Maryland Medical Journal* (December, 1917) contains the following claim for composition:

"CAMPETRODIN (Made in Two Strengths of Iodine). This preparation is an Oleaginous Solution of Iodine in Camphor."

A booklet describing the "specialties" of the Robins Company contains the following in reference to Campetrodin: "Composition: Camphor, Iodine Element, Oleaginous Solvent." From this it appears that the preparations are claimed to contain elementary (free) iodin in an "oleaginous solvent." Since free iodin, as is well known, readily combines with fats, it was decided to determine the form in which the iodin was present in these preparations. The examination demonstrated that both preparations contained but a trace of free iodin. On steam distillation there was obtained from both preparations a distillate amounting to about 35 per cent. by volume which had an odor strongly suggestive of turpentine, while the residue contained the iodin and had the characteristics of an iodized fatty oil.

Quantitative determinations indicated that Campetrodin contained approximately 0.03 per cent. of free iodin and 1.3 per cent. of iodin in combination with the fatty oil. Campetrodin No. 2, Double Strength, contained approximately 0.03 per cent. free iodin and 2 per cent. of iodin in combination with the fatty oil.

Thus, contrary to the published statements, Campetrodin is *not* a preparation of free (elementary) iodin and Campetrodin No. 2, Double Strength, does *not* contain twice as much iodin as Campetrodin.

The report of the Chemical Laboratory shows that the statements made in regard to the composition of Campetrodin and Campetrodin No. 2 are incomplete in some respects and false in others. In view of the Laboratory's findings it appears superfluous to inquire into the therapeutic claims made for the preparations: It is evident, however, that a solution containing practically no free iodin is not, as claimed by the Robins Company, "adapted for use wherever . . . iodin is indicated externally. . . ."

It is recommended that Campetrodin and Campetrodin No. 2 be declared inadmissible to New and Nonofficial Remedies because of false statements as to chemical composition and therapeutic action, constituting conflicts with Rules 1 and 6.

The Council adopted the recommendation of the referee and authorized publication of this report.

EATONIC

"Eatonic" is "distributed" by the Eatonic Remedy Co., Chicago. If one believes the claims of the Eatonic concern —and we do not recommend this—"the Advanced Scientific Thought of the Medical World has been called upon to produce Eatonic"! Here are some of the claims made for Eatonic in newspaper advertisements, which, by the way, are not subject to the penalties which control claims made for medicinal products on the trade packages:

"INSTANTLY relieves HEARTBURN, BLOATED, GASSY FEELING, STOPS acidity, food repeating, and stomach misery."

"AIDS digestion; keeps the stomach sweet and pure."

"Eatonic is the BEST remedy . . ."

"Sponge up the excess acids and poisonous fluids from the stomach by chewing these compressed compounds—stomach pains guaranteed to leave at once."

"Removes Indigestion, Bloat, Heartburn, etc."

In the trade-package the claims are more cautious. We do not find there that it "instantly relieves heartburn, bloated, gassy feeling," etc., but we do find:

"Intended for the relief of . . . Heart Burn . . . Gassy, Windy, Bloated Stomach . . ."

Which, of course, is different! The Eatonic Remedy Co. might say with equal safety that their tablets were "intended for" the reduction of the national debt, or the repairing of automobile tires. There is nothing to prevent a manufacturer from declaring what his product is "intended for." And who could resist the lure of this:

"Be a good liver—while you live. You don't have to live on a Death Diet, but eat what you like and be normal. Remember, Eatonic drives the gas out of your body—and the bloat goes with it. It stops the super-acidity—that is, too much acid—that causes nearly all stomach trouble."

At the request of the Propaganda Department, the Chemical Laboratory of the A. M. A. took up Eatonic for investigation. Here is its report:

CHEMISTS' REPORT

Eatonic is in the form of black, uncoated tablets, having a mintlike odor, and a sweet and mintlike taste. Each tablet is stamped "Eatonic" and each weighs about 27.4 grains. A qualitative examination showed Eatonic to contain calcium, magnesium, carbonate, sugar, charcoal and silica or a silicate. The odor and taste suggested peppermint. As no soluble carbonate could be detected, the calcium and carbonate are probably present as calcium carbonate. The qualitative examination indicates that Eatonic is composed of calcium carbonate, charcoal, sugar, and oil of peppermint as flavoring. From this examination, and from the quantitative determinations carried out, we conclude that Eatonic is essentially calcium carbonate 20 parts, sugar 55 parts, charcoal 12 parts in a hundred. The remainder is flavoring, and material undetermined. Each tablet contains approximately 5.5 grains calcium carbonate, 15 grains sugar, and 3.25 grains charcoal.

This, then, is the best that the "Advanced Scientific Thought of the Medical World" could do:

Calcium carbonate (chalk)	5½ grains
Sugar	15 grains
Charcoal	3¼ grains

Surely the labors of such a mountain have brought forth a ludicrously insignificant mouse! Summed up, it may be said that "Eatonic" is a simple and innocuous tablet of the antacid type. It will do nothing that cannot be done equally well by the well-known "sodamint tablets." The latter, being nonproprietary, and therefore competitive, are sold at a fraction of the cost of "Eatonic" while the incentive to force them on the public under false and misleading claims is reduced to a minimum.

Health Standards and Care of Immigrants.—The Carnegie Corporation has undertaken a national study of the methods of Americanization of immigrants in the United States. The work is to be done by ten divisions, and of these the division on health standards and care is under the direction of Michael M. Davis., Jr., director of the Boston Dispensary. The aim of this division is to learn what the health agencies throughout the country are doing to keep the immigrants up to American standards of health. The division desires the cooperation of individual physicians, hospitals, dispensaries, health departments, nursing and medical associations, industries, and all other national organizations working to promote the public health. Information is sought concerning health conditions and problems among the foreign-born of different races in different localities.

Correspondence

ORIGIN OF THE TERM "NEUROCIRCULATORY ASTHENIA"

To the Editor:—An article by Drs. Morris and Friedlander in The Journal (Aug. 3, 1918, p. 375) calls my attention again to a misunderstanding arising out of an error in publication. The article that appeared under my name in the *Military Surgeon* (1918, **42**, 409) was written by the American medical officers who were then attached to this hospital. They were Capt. B. S. Oppenheimer, Lieut. M. A. Rothschild, Lieut. S. A. Levine, Lieut. F. Wilson, Lieut. R. Morison and Lieut. St. Lawrence. The article was sent to press under their names, but at their request I added a short "foreword." Through an editorial blunder, as I am informed, the article appeared wrongly under my name. Though I am in agreement with the main arguments of the writers, as indicated by the foreword that I wrote, I naturally cannot assume responsibility for statements which are in reality theirs; that would be unfair both to the real authors and to myself. Thus the term "neurocirculatory asthenia," which is used by them to describe the condition of certain invalided soldiers, is not of my making. Let me not be misunderstood; I express no objection to nor criticism of the term; at the same time I do not adopt it to designate the condition.

Thomas Lewis, M.D., Military Heart Hospital,
Colchester, England.

VOLUNTEER MEDICAL SERVICE CORPS

[Two weeks ago The Journal (September 7, p. 845) published in Queries and Minor Notes letters and answers relative to the Volunteer Medical Service Corps. These prompted the correspondence that follows:]

FROM PHILADELPHIA

To the Editor:—There are two things about your reference in the issue of September 7 regarding the Volunteer Medical Service Corps: one is the publication of letters over initials only of the writers without specific address, and the other is your unfavorable reference to the idea of a corps of this character. I am not in a position to know, but would regard your strictures as based on some personal or collective feeling in the matter. However, I am wearing a button and have felt happy in the thought that at my age [61] I have agreed to do any service to the government in the medical or surgical line it is commanded that I shall do during the war. Your fault finding with the plan makes me a little unhappy. I agree so generally with The Journal in its views that I must protest against this apparently grouchy complaint of yours. Evidently the plan has met with the approval of the Medical Department of the Army. Why, therefore, this condemnation? Perhaps more elucidation on your part will satisfy my curiosity as to how it is, as one correspondent, "W. E., Michigan," says, "Martin and his elements seem to be pushing things with a high hand," etc.

Gordon M. Christine, M.D., Philadelphia.

FROM ST. LOUIS

To the Editor:—As a Fellow of the American Medical Association who takes due pride in the organization, I am constrained to express my regret at the tone of your correspondents' notes and your answer concerning the Volunteer Medical Service Corps (The Journal, Sept. 7, 1918, p. 845).

At any other time, the expression of personal pique against Dr. Franklin H. Martin might be either sublime or ridiculous, according to the point of view. At present, when combined with your attack on the Council of National Defense, it constitutes at least betrayal of the loyal attitude of the membership of the American Medical Association, if it does not actually give aid and comfort to the enemy.

You should know that the Volunteer Medical Service Corps was originated to give some degree of recognition to the physicians who must remain at home. We find here that Illinois physicians are as anxious for this distinction as are those in other states where the Medical Section, Council of National Defense, is fully organized.

May we hope for some expression that will remove the disgrace caused by your thoughtless reply?

W. H. Luedde, M.D., St. Louis.

FROM ELMIRA, N. Y.

To the Editor.—The "Volunteer Medical Service Corps" merits much plainer discussion than The Journal has seen fit to devote to it.

In Elmira, for example, we had only a handful of doctors in the Medical Reserve Corps, U. S. Army. We needed stimulation or something. So Major C. A. L. Reed was sent here to enable any physicians so inclined to be examined for commissions without inconvenience to themselves. The local representatives of the Volunteer Medical Service Corps gave out to the press, and there was duly published, a statement that all physicians were compelled to apply for commission or enroll in the stay-at-home-and-wear-a-button corps. The chairman of the local committee of the Volunteer Medical Service Corps called a meeting of physicians, and in his address stated emphatically that the matter of applying for a commission or enrolling in the organization was "not an invitation, but a command." He gave to the press a signed statement declaring that he had "received orders from the Office of the Surgeon-General to place the matter before the physicians of this community."

Most of the physicians swallowed hard, and believed they had no choice in the matter. The papers next announced to the public that "only one Elmira physician had failed to enroll, although enrolment is compulsory, and his name will be forwarded to Washington."

His name has been forwarded to Washington, all right, but not in the unpleasant way the Volunteers to Stay At Home would have it. I think—I fear, I should say—that I am the one who put the question mark after the first word of the title of this Wear a Button and Ease Your Mind Corps. At least I frothed at the mouth to a considerable extent in the public prints in "a foul, pro-German effort" to make it known that there is nothing compulsory about applying for a commission in the U. S. Army or about joining an organization of those who are going to stay home as a large and enthusiastic body of patriots.

Every doctor with any self respect ought to be competent to decide for himself what his duty is at present. And surely no physician in America would require the counsel, advice or command of any organization, or even its insignia or moral support, to make him jump at the opportunity of rendering any service which his government might ask of him, at home or abroad.

The Volunteer Medical Service Corps' activity in Elmira adds weight to the argument of experienced Army men that it is unwise to grant medical officers too much rank. Here we have a quasi-official organization actually attempting to conscript the medical profession and control each individual's conduct for the duration of the war and afterward. It looks to me as though the illustrious Martin and his numerous brood of FACSimiles are seizing the present time to promote a great scheme to gain control of the medical profession.

As a private citizen I can still criticize high officials, and from the way in which the Surgeon-Generals and the Surgeon-Generals' Offices are being used to lend an air of authority to the promoters of this Volunteer-Compulsory Guild—well, I should think the Surgeon-Generals would have enough to do without wasting time and energy puttering with a sunshine circle.

The other day an Elmira doctor, 34 years of age, received his commission in the Medical Reserve Corps, U. S. Army, and left for camp.

The newspapers announced the fact, and tacked on the item this flattering comment: "Dr. ———— applied for his commission at the time enrolment of physicians became compulsory."

That makes a man hesitate about accepting a commission just now. It no doubt pleases the FACSimiles to see how well the Volunteer Medical Service Corps is working out its problems.

THE JOURNAL should handle this question without gloves. This gratuitous organization is working a great deal of harm, and beyond any doubt its quasi-official rulings as to eligibility encourage many a doctor, who is wavering, in the belief that it is not his duty to get into the service. Its entire program is harmful to the best interests of the country and of the profession, in precisely the same way that the Red Cross is injured by the type of woman that wears the uniform of the Red Cross nurse for show purposes. Just now it is merely a question of button, button, who's got the button—or rather who hasn't. But if the thing goes on, first thing we know the doctor who stays at home because he must or will is going to have a lovely uniform to wear as evidence of his great sacrifice.

WILLIAM BRADY, M.D., Elmira, N. Y.

FROM WALDOBORO, MAINE

To the Editor:—In July, immediately after the request from the President of the American Medical Association to do so, the writer undertook through the presidents and secretaries of the county medical societies of this state a survey of the medical situation. This has been done so far as appears possible up to the present, but final results cannot yet be made. This canvass met a whole-hearted response from many of those requested to aid and an equally whole-hearted criticism from many more. My personal view was that it was not, in this state, necessary, and that inasmuch as it carried no authority from the War Department it was more likely to do harm than good.

However, this and my visits to ten county societies have resulted in a very definite opinion being formed so far as the volunteer system of securing physicians for the Army is concerned, and community needs. For the former it has secured a fair percentage, but very much at the expense of the needs of the country—farming—population so that now, even, there is developing a condition which is most likely to become serious as difficulties of cold weather travel develop, and it seems to me that no one in the American Medical Association, including yourself, has any authority to remedy it.

Your comments on the Volunteer Medical Service Corps appear to ignore the fact that the Surgeon-Generals of the Army, Navy and Public Health Service and the Provost Marshal-General head the list of the Central Governing Board and Council of this body, and that it therefore bears their approval, and that the work must be done in order to fill a definite need which they foresee.

It seems to me that, as good soldiers, a request from these men should receive all the strength of a command and that we are making a very serious mistake if we in any way block the work which they are trying to do. If we are to have unity in the medical profession now and in the future, criticisms of this sort in the official organ of the Association of the work of those at the head of the medical work of our forces should be curtailed. It seems to me that if the leaders in the work of THE JOURNAL disagree with the methods and criticize the work of this body, the least they can do is to publish at the same time the plan and scope of the work and the names of the officers.

It should be enough for any man to know that these men in their official capacity ask this, for every physician in the country to immediately respond and place his services at the disposal of the government, leaving the work of selection to the members of the organization in their counties and state to whom the work has been delegated subject to their right of appeal to the Surgeon-Generals and Provost Marshal-General as heads of this body.

GEORGE H. COOMBS, M.D., Waldoboro, Maine.

FROM CHICAGO

To the Editor:—There has been brought to your attention, as evidenced in Queries and Minor Notes of last week's issue, a letter and questionnaire that have been sent out over the signature of the chairman of the Medical Section of the Advisory Commission of the Council of National Defense. I believe these demand consideration and discussion in THE JOURNAL.

While one is reading these documents many questions spring to mind, chief of which concern the inferred inefficiency or insufficiency of the Surgeon-Generals' Offices and the Provost Marshal-General's Office; the purpose and necessity of this new organization; its relation to the above mentioned offices, and its relation to the profession and of the profession to it and to the government. For an answer to these we read with interest, if not with enlightenment, the "pledge," the "scope and purpose," the "object of the corps," the "working plans" and the "operating system." Throughout we gather the impression of the implied lack of foresight and of breadth of vision, of inefficiency and insufficiency of the Surgeon-Generals and other government officials, and therefore the need of such a wise governing body as the Medical Section of the Council of National Defense. Like the proficient Irishman, its efficiency does not need to be proved; it admits it.

Among other things, the Volunteer Medical Corps places on record all medical men and women in the United States. How more so than the present government information as gained from the American Medical Association and other sources? Are other sections similar to the Medical Section of the Council of Defense belittling their respective trades and professions? In what respect are, and at what times have, the medical men shown themselves less loyal than other professions or trades that they should be thus treated?

The "working plans" and "operating system," for sheer autocracy, should commend themselves to His Imperial Majesty, Wilhelm. The applicant finds his organization thoroughly manned with officers and executives awaiting only his humble self. Provision is made for a perfectly good set of officials, hand-picked and responsible only to the Medical Section of the Advisory Commission. By this same Medical Section we find that the applicant has his rules and regulations all cut and dried for him. To these he promises to conform. If the Central Board tells him to apply for a commission he must do so, whether the Surgeon-General wishes it or not; it is imperative that he comply with any request for service at any time at any place made by the Central Governing Board; for all of which he finds no provision for himself or family, although he may be sent to the ends of the earth for service. In fact, the whole matter presents the appearance of a one-sided agreement so poorly trumped up as to be not even plausible; to be presuming on the work of the Surgeon-Generals and of the Provost Marshal-General and breaking up a service which is logically unified in the Surgeon-Generals' Offices. Unfortunately, there are many men who have taken it seriously and have sent in their applications, some thinking it was a command from the Provost Marshal-General and others that it may relieve them from such active military duty as would remove them from their homes.

It would seem that THE JOURNAL would serve an excellent purpose by giving this matter extended consideration and explaining matters to its great democratic constituency.

HUGH NEIL MACKECHNIE, M.D., Chicago.

To the Editor:—I wish you might think it advisable to enlighten the profession as to the alleged Voluntary Medical Service Corps as the latest Chicago Medical Society *Bulletin* has done. We need the information.

WILLIAM T. BELFIELD, M.D., Chicago.

FROM IOWA

To the Editor:—I wish to thank you for the information concerning the Volunteer Medical Service Corps. I do not like the methods pursued. The circular letter received with the application blank was an imperative one, saying, "Sign this and return at once." Another thing that has crept in is the signing of this blank by men over age not acceptable

under any circumstances, and to put the very few like myself who did not sign the blank in a "slacker" minority. This, with the newspaper publicity, makes conditions both trying and embarrassing. I resent being put in a situation whereby those who are too old or physically incapacitated who can flaunt a button and use it as a whip to compel me to do something that, as you say, is "of indefinite and undeterminate value to the welfare of the nation." I do not approve of stampede methods in any crisis, and much less in such a one as this. If the civilian population is to be looked after, let it be considered honorable to do it, and not place the civilian doctor dependents in a class by publishing lists of those who join the society, one half of whom in some counties are too old to qualify for any service, and a certain percentage of whom are physically incapacitated. This is not to be published over my name in case you use it.

J. C. C., Iowa.

PHYSICIANS CLAIMING EXEMPTION ON GROUNDS OF DEPENDENCY

To the Editor:—It has been stated in The Journal that some local boards have refused to allow the claims of physicians to exemption or deferred classification on the ground that they are eligible for commission as officers in the Medical Reserve Corps.

There has been no draft of doctors as such. This is not a draft of doctors. It is a civilian draft. All physicians under the age of 46 have been required to register just the same as all other citizens, have the same rights as all other citizens and are entitled to the same treatment that all other citizens receive.

Does the fact that a man is a physician take away any of the constitutional rights which he enjoys in common with every other citizen?

Every physician who can possibly see his way clear to do so should be proud to hold a commission in the Medical Reserve Corps, but no physician is compelled or can be compelled in the matter. Under the law, enlistment in the Corps is, and always has been entirely voluntary, and no draft board can give a commission in it nor guarantee that the government will do so.

Suppose if, for the best of reasons, or for no reason at all, a physician does not apply for a commission, what then? Why then the law distinctly says that if he is a man with wife or children mainly dependent on his labor for support he belongs in Class IV, physician or no physician. There is nothing ambiguous or mysterious in this language; it is as plain as daylight. It does not say men, *except* physicians.

What the boards you refer to are evidently trying to do is to enforce enlistment in the Medical Reserve Corps, a thing that cannot be done, and is an attempt at coercion which a government with a well balanced sense of justice ought promptly to suppress.

If the above observations are erroneous, then my whole conception of the draft system, the Medical Reserve Corps and the draft legislation enacted by Congress is at fault.

R. S. Cone, M.D., Westwood, N. J.

Industrial Employment and Infant Mortality.—It will be seen that in the homes where acute poverty exists there is a marked falling off in the average weight of the baby whether the mother is industrially employed or not. It seems pretty certain that industrial employment has a bad effect on the infant mortality, principally because it interferes with breast feeding. For this reason employment in a factory is more harmful than employment at home. But the influence of industrial employment is quite small when compared with the influence of acute poverty. It would seem therefore that in so far as the mothers' employment reduces the acuteness of the poverty, it may even tend to improve the infant mortality. At any rate, it is doubtful whether any further interference with the employment of married women would be at all beneficial as long as the acute poverty remains.—Report of Dr. Jessie Duncan on Infant Welfare in Birmingham.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CIVIL RIGHTS OF PERSONS IN MILITARY SERVICE—PERMISSION TO WITHDRAW FROM SERVICE

To the Editor:—1. I have been unable to ascertain just what the moratorium covers in regard to the physician who enters the service. I know in a general way that it is supposed to take care of his debts; specifically, I should like to know what disposition could be made in a matter as follows: A lease was taken in 1918 for a period of five years at a rental of $75 per month, together with an option to purchase. The option expires in the fall of 1918. Now what I should like to know is whether or not on entering the service I could extend this option and also the obligation of the rental? How does the moratorium operate in regard to notes and mortgages?

2. Can a medical officer resign in case of sickness to family or self?

J. C. A.

Answer.—1. There is no moratorium specifically covering physicians who enter the service. The Chamberlain bill for the protection of the civil rights of soldiers and sailors, approved March 8, 1918, concerns debts, notes, mortgages and insurance of all men in the service of the government. Under this act, protection is extended to persons in the military service of the United States in order to prevent prejudice or injury to their civil rights during their term of service and to enable them to devote their entire energy to the military needs of the nation. The second article of the act provides for general relief, its purpose being to protect the rights of the man in military service in any action brought against him in court, causing the court either to permit the defendant to appear in person or by an authorized attorney, or to appoint an attorney to represent him, who has not, however, the power to waive any right of the person for whom he is appointed, or to bind him by his acts. The person in military service is given an opportunity to reopen the case at any time within ninety days after judgment is rendered, and the court is also permitted at any time during the period of military service to stay execution of judgment and to vacate or stay any judgment or garnishment of property, money or debts in the hands of another. Such stay of action may be ordered for the period of military service and three months thereafter.

LEASES, MORTGAGES, ETC.

Article 3 provides that no eviction shall be made during the period of military service in respect to any premises for which the agreed rent does not exceed $50 per month, occupied chiefly for dwelling purposes by the wife, children or other dependents of the person in military service, except on leave of court granted on application therefor. The court is permitted to stay proceedings for not longer than three months. Section 301 of Article 3 provides that no person who has received or whose assignor has received, under a contract for the purchase of real or personal property or of lease or bailment with a view to purchase of such property, a deposit or instalment of the purchase price from the person who after the date of payment of such deposit has entered military service, shall exercise any right or option under such contract to rescind or terminate the contract or resume possession of the property for nonpayment of any instalment falling due during the period of such military service, except by action in a court of competent jurisdiction. On the hearing of action the court may order the repayment of instalments or deposits as a condition of terminating the contract, or may in its discretion on its own motion, and shall on application to it by such person in military service or some person on his behalf, order a stay of proceedings, or it may make such other disposition of the case as may be equitable to conserve the interests of all parties. The provisions apply to obligations originating prior to March, 1918, secured by mortgage, trust deed, etc.

INSURANCE AND PREMIUMS

Article 4 concerns insurance and premiums. Persons in the military service should apply on a form prepared in accordance with regulations prescribed by the Secretary of the Treasury for modification of the terms of his original contract of insurance. The original of such application is

sent by the insured to the insurance company and a copy to the Bureau of War Risk Insurance. The benefits of this application are available to any person in military service in respect to contracts of insurance in force up to but not exceeding a face value of $5,000 irrespective of the number of policies held or whether held in one or more companies, when such contracts were made and premium was paid before September 1, but not in cases in which no premiums have been paid for a period of more than one year. This act provides that no policy which has not lapsed for the nonpayment of premium before the commencement of military service of the insured, and which has been brought within the benefits of this article, shall lapse or be forfeited for the nonpayment of premium for the period of such service or for a period of one year after the expiration of such period. It provides that the insurance companies shall send to the Bureau of War Risk Insurance each month a list of the policies coming under the act on which application has been made. The Bureau of War Risk Insurance then deposits bonds with the insurance company covering the defaulted premiums, these bonds to be held by the insurance company as guarantee of payment of future premiums. To indemnify it against loss, the United States has the first lien against any policy receiving benefits under this article. In the event that the military service of any person being the holder of any policy receiving the benefits of this act is terminated by death, the amount of any unpaid premiums with interest at the rate provided for in the policy for policy loss shall be deducted from the proceeds of the policy and is included in the next monthly report of the insurance company to the United States as premiums paid. If the insured does not within one year after the termination of his period of military service pay to the insurance company all past due premiums with interest thereon, the policy shall at the end of that year lapse and become void, and the insurance company becomes liable to pay the cash surrender value.

This is taken from the booklet of "Information Regarding Medical Service in the United States Army," published by the American Medical Association.

2. A medical officer can resign only with the consent of the Surgeon-General.

HOW MUCH A MEDICAL OFFICER CAN SAVE—ENLISTMENT IN THE MEDICAL DEPARTMENT

To the Editor:—1. How much can a medical officer save from his salary and allowance for the support of his family? Of course this depends on the person's habits; but if possible make a statement, based on experience of physicians who have had actual experience in the matter, as to the necessary expenses of a medical officer. I have heard conflicting reports. One is that when abroad a medical officer requires his entire pay for his own support; another, that if an officer is careful he can almost live on his "allowances" and thus devote his salary to the support of his family. I believe that it would be very helpful for many of us who have families dependent on us and who have been practicing too short a time to have accumulated anything, to know how much of the pay and allowance may be reserved for the use of a dependent wife and children.

2. I understand that enlistment is closed since the passage of the new draft law. Does this apply to the medical service? Please omit my name.

J. M. E., Illinois.

ANSWER.—1. The lowest salary which a medical officer receives is that of a first lieutenant—$166.66 a month. If he maintains a residence for dependents, he receives in addition, commutation of quarters, heat and light, averaging about $42 a month. If the officer is abroad, he receives also 10 per cent. additional pay, the total for lieutenant approximating $225 a month. The average expense of an officer in camp varies from about $40 to $75 a month, including his mess bills and incidental expenses.

2. Enlistment is not closed in the Medical Department.

THE CADUCEUS AND THE EMBLEM OF THE MEDICAL PROFESSION

To the Editor:—What was the significance of the caduceus that it should have become emblematic of the medical profession?

L. J. S., Idaho.

ANSWER.—The caduceus, the rod surmounted by the extended wings and entwined by the two serpents, though regularly used in that connection, is not especially the emblem of the medical profession. According to the Century Dictionary the caduceus is a symbol of peace and prosperity, and in modern times figures as a symbol of commerce. The rod or wand is supposed to be the wand of Mercury, the god of commerce. The rod represents power; the serpents represent wisdom, and the two wings, diligence and activity. As stated by Dr. Samuel P. Gerhard (THE JOURNAL, April 24, 1909), the true ancestral symbol of the healing art is the knotty rod and serpent of Esculapius, the device adopted for the emblem of the American Medical Association. The significance of this device is much the same as that ascribed to the caduceus, but as Dr. Gerhard has shown from history and mythology, the serpent as the representative of wisdom has been from time immemorial linked up with the healing art. Dr. Gerhard says:

> Esculapius was always pictured with a knotty rod in his hand, the knots indicating the many difficult problems of physics to be solved in the treatment of the ailments of mankind. Therefore, applying these thoughts to the symbol, we have in the entwined serpent, power, wisdom and health, together with the protection and support against disease and the difficulties to be overcome by the knotty rod. With this historical symbol the sanctity of medicine can be pictured and the doctor is shown in his true light, not only as a laboratory scientist and as a practitioner, but as a teacher and adviser to the patient, the family and the community in all the difficult problems that arise concerning health and disease.

PHYSICAL DISABILITY IN A PHYSICIAN WISHING COMMISSION—CLASSIFICATION UNDER SELECTIVE SERVICE

To the Editor:—1. I have been placed in Class V by the local board on account of entire loss of hearing of one ear due to a radical mastoid operation, and chronic suppurative otitis media of the other ear with impaired function. Would I be accepted for the Medical Reserve Corps? 2. Would I be accepted for the Red Cross? 3. Do you think the board may change my classification and send me to camp as a private?

M. G.

ANSWER.—1. Probably not. It is impossible from the written description of the condition to state in most instances whether or not the physical disability is sufficient in character to disqualify the applicant for membership in the Medical Reserve Corps. Those who are in doubt should apply before the nearest examining board, which will pass on the physical condition.

2. The Red Cross does not submit its physicians to a physical examination, and any physician who can qualify physically for general practice would, no doubt, be able to qualify for the work of the Red Cross. Address Dr. Alfred E. Shepley, Director, Medical Personnel Bureau, American National Red Cross, Washington, D. C.

3. It is impossible to say what a board will do. The regulations concerning professional men, when issued, may have some bearing on such a case.

COMMUTATION OF QUARTERS FOR WIVES OF OFFICERS

To the Editor:—My husband received his call to service, reporting at Fort Oglethorpe last October and sailing in January for duty overseas. Before going abroad he had a certain portion of his salary allotted to me, the allottment being sent to a bank in this city. I should like to know if my son and self, as dependents, are not entitled to something from the government for commutation of quarters. What is the amount allowed each month? Can I make application for same to the Quartermaster-General, or should my husband do so?

Mrs. D. M. N., Connecticut.

ANSWER.—The wives of officers are not entitled to collect any extra allowance for commutation of quarters. If an officer maintains a residence for dependents he is entitled to make notation to that effect on his monthly pay check, and the sum allowed is paid to the officer himself. The amount varies from about $42 a month for a lieutenant to $55 a month for a captain and $70 a month for a major.

SUPPLY OF APPARATUS TO MEDICAL OFFICERS

To the Editor:—I have recently enlisted in the Medical Reserve Corps. My practice is confined to general surgery and my information so stated. I have devoted considerable attention to bone and joint surgery, and am equipped with the necessary instruments for such work, including an electromotor outfit, electric sterilizer oven, etc. If I should be ordered to active service abroad, would my surgical armamentarium be aceptable for my use there, or is the supply ample and is one required to use only instruments and apparatus furnished by the department? To whom should I refer for detailed information? Please omit my name.

S. P. A., Iowa.

ANSWER.—Medical officers in our Army are supplied with all instruments, apparatus, drugs, etc.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, Oct. 1. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

CALIFORNIA: Sacramento, Oct. 21-24. Sec., Dr. C. B. Pinkham, Butler Bldg., San Francisco.

COLORADO: Denver, Oct. 1. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, Oct. 8. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

GEORGIA: Atlanta, Oct. 8-9. Sec., Dr. C. T. Nolan, Marietta.

IDAHO: Boise, Oct. 1-2. Sec., Dr. Ray H. Fisher, Rigby.

ILLINOIS: Chicago, Sept. 24-27. Mr. F. C. Dodds, Supt. of Registration, Springfield.

KANSAS: Topeka, Oct. 8-9. Sec., Dr. H. A. Dykes, Lebanon.

MICHIGAN: Lansing, Oct. 8-10. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, Oct. 1-4. Sec., Dr. T. McDavitt, 741 Lowry Bldg., St. Paul.

MISSOURI: Kansas City, Sept. 30-Oct. 2. Sec., Dr. George H. Jones, State House, Jefferson City.

MONTANA: Helena, Oct. 1. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEVADA: Carson City, Nov. 4. Sec., Dr. S. L. Lee, Carson City.

NEW JERSEY: Trenton, Oct. 15. Sec., Dr. Alex. MacAlester, 438 E. State St., Trenton.

NEW MEXICO: Sante Fe, Oct. 14. Sec., W. E. Kaser, East Las Vegas.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 24-27. Mr. H. J. Hamilton, New York Dept. of Education, Albany.

OKLAHOMA: Oklahoma City, Oct. 8-9. Sec., Dr. J. J. Williams, Weatherford.

RHODE ISLAND: Providence, Oct. 3. Sec., Dr. B. U. Richards, 315 State House, Providence.

UTAH: Salt Lake City, Oct. 7-8. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

Arizona April Examination

Dr. Allen H. Williams, secretary of the Arizona Board of Medical Examiners, reports the written examination held at Phoenix, April 2-3, 1918. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 5, including 1 osteopath, passed, and 3, including 1 osteopath, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Phys. and Surgs., Los Angeles	(1912) 84.9; (1917)		79.5
State University of Iowa College of Hom. Med.	(1903)		79.2
Washington University	(1903)		91.7
	FAILED		
Detroit College of Medicine and Surgery	(1916)		69.6
Syracuse University	(1887)		59

Georgia June Examination

Dr. C. T. Nolan, secretary of the Georgia State Board of Medical Examiners, reports the written examination held at Atlanta and Augusta, June 4-5, 1918. The examination covered 10 subjects and included 100 questions. An average of 80 per cent. was required to pass. Of the 31 candidates examined, 30 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College	(1915)		80.9
Emory University	(1918) 85.5, 85.8, 87.6, 88.1, 89.2, 89.2, 89.6, 89.6, 90.5, 90.9, 91.8, 94.3, 94.1, 94.9, 95		
University of Georgia	(1918) 86.3, 86.9, 90, 90.2, 90.5, 90.8.		
Chicago Coll. of Med. and Surg.	(1915) 91.3; (1916) *; (1917)		87.7
Columbia University	(1917)		90.6
Chattanooga Medical College	(1899)		80.9
Meharry Medical College	(1914) 83; (1918)		88.6
Vanderbilt University	(1917)		86.7
	FAILED		
Southern College of Medicine and Surgery	(1913)		77.8

* No grade given.

Indiana June Examination

Dr. W. T. Gott, secretary of the Indiana State Board of Medical Registration and Examination, reports the written examination held at Indianapolis, June 13-15, 1918. The examination covered 16 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 41 candidates examined, 40, including 1 osteopath, passed, and 1 failed. Eleven candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Loyola University	(1918)		94.5
Rush Medical College	(1917)		90.6
Indiana University	(1918) 84.4, 85.1, 87.6, 87.9, 88.1, 88.1, 88.5, 88.8, 88.9, 89.3, 89.4, 89.5, 89.9, 90.2, 90.6, 91, 91, 91, 91.1, 91.4, 91.8, 91.8, 91.8, 92, 92, 92.1, 92.4, 92.5, 92.7, 92.9, 93.3, 93.4, 94.8, 95.1.		
Louisville National Medical College	(1908)		83.2
Eclectic Medical College	(1918)		91.1
Meharry Medical College	(1916)		85.6
	FAILED		
University of Nashville	(1900)		84*

*Fell below minimum percentage in a major subject.

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Bennett Coll. of Eclectic Med. and Surg.	(1901)		Illinois
Chicago College of Med. and Surg.	(1914)		Illinois
University of Louisville	(1917)		Kentucky
University of Michigan Medical School	(1909)		Michigan
Washington University	(1910)		Missouri
Miami Medical College	(1897)		Kentucky
Jefferson Medical College	(1909)		Ohio
Meharry Medical College	(1913)		Tennessee
Vanderbilt University	(1893)		Kentucky
University of Vermont	(1914)		Maine
University of Virginia	(1907)		Virginia

Louisiana June Examination

Dr. E. W. Mahler, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, June 6-8, 1918. The examination covered 11 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 45 candidates examined, 41 passed and 4 failed. Three candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Bennett College of Eclec. Med. and Surg.	(1906)		75.7
Tulane University	(1917) 77.4, 83.6; (1918) 75.1, 78, 78.5, 80.2, 80.8, 81.9, 82.7, 83, 83.4, 83.8, 84.1, 84.2, 84.7, 85.1, 85.5, 86.1, 86.3, 86.7, 87.1, 87.2, 87.3, 87.8, 88.1, 88.2, 88.6, 88.8, 88.9, 89.2, 89.4, 89.5, 89.5, 89.5, 89.6, 90.2.		
Woman's Med. Coll. of N. Y. Inf. for Women & Child.	(1899)		78.6
Starling Medical College	(1882)		75
Memphis Hospital Medical College	(1903) 78; (1907)		75
	FAILED		
Eclectic Medical Institute	(1879)		50.4
College of Phys. and Surg., Memphis	(1911)		62.3
Memphis Hospital Medical College	(1911) 70.1; (1912)		71

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College	(1903)		Illinois
State University of Iowa College of Medicine	(1907)		Iowa
University of Louisville	(1908)		Georgia

New Jersey June Examination

Dr. Alexander MacAlister, secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, June 18-19, 1918. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Fifteen candidates, including 1 osteopath, were examined, all of whom passed. Fifty-six candidates were licensed by endorsement. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Maryland	(1916)		84.2
Tufts College Medical School	(1917)		85.4
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1917)		90.4
Jefferson Medical College	(1917) 86,		93.8
University of Pennsylvania	(1917) 75.3, 79.7, 80.5, 85.7, 86.4.		
National University, Athens	(1898)		76.1
University of Naples	(1893) 78.3; (1908) 75,		75

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement with
George Washington University	(1914)	(1917)	New York
Howard University	(1910)		Dist. Colum.
Hahnemann Med. Coll. and Hosp. of Chicago	(1908)		New York
Baltimore Medical College	(1905) Maine; (1905)		Maryland
Johns Hopkins University	(1915)		Connecticut
University of Maryland	(1915) North Carolina; (1916)		Maryland
College of Phys. and Surg., Boston	(1907)		Mass.
Tufts College Medical School	(1907)		Mass.
University of Michigan Medical School	(1902)		Ohio
Washington University	(1914)		Missouri
Columbia College in the City of New York	(1895)	(1896)	New York
Columbia University	(1901) (1903) (1905) (1906) (1908) (1911)	(1917)	New York
Fordham University	(1916)	(1917)	New York
Long Island College Hospital	(1905)		Maryland
	(1907)	(1915) (1917)	New York
New York H. Med. Coll. and Flower Hosp.	(1914)		Maryland
	(1914)	(1915) (1917) New York; (1917, 2)	Delaware
University and Bellevue Hosp. Med. Coll.	(1917)		New York

University of the City of New York	(1890)	New York
Woman's Med. Coll. of N. Y. Infirmary for Women and Children	(1898)	New York
University of Oregon	(1917)	New York
Hahnemann Med. Coll. and Hosp. of Philadel.	(1899) (1903)	Penna.
Jefferson Med. Coll.	(1901) (1902) (1908) (1915)	Penna.
Medico-Chirurgical College of Philadelphia	(1915)	Mass.
	(1916)	Penna.
University of Pennsylvania	(1897) (1899) Penna; (1902, 2)	New York
Woman's Med. Coll. of Pennsylvania	(1901) (1913)	Penna.
University of Vermont	(1905) Vermont; (1914)	Illinois
University of Virginia	(1913)	New York
University of Naples	(1914)	New York

Book Notices

DIET AND HEALTH WITH KEY TO THE CALORIES. By Lulu Hunt Peters, A.B., M.D. Cloth. Price, $1 net. Pp. 105, with illustrations. Chicago: The Reilly and Britton Company, 1918.

By its title this booklet assumes to be a parody on the guide of a well known religiomedical cult. This, however, appears only slightly in the text in the form of a few of the side headings. The book is intended primarily for the lay public. It contains some good advice in simple language. It explains to the layman the meaning of the calory and the value of this knowledge in choosing diet for the treatment both of obesity and of undesirable thinness, if in a person otherwise normal the latter condition may be said to exist. The book is not serious in tone, but in spots quite facetious; in fact, in some places the humor is even a little forced. Regardless of the financial success of various books for instructing the obese how to become sylphlike and effervescent, it is likely that the personal touch of the instructor with the ambitious disciple is the primary factor. So far as any book is able to maintain this personal touch with the reader, it will be successful in accomplishing its aim. Dr. Peters' book distinctly reflects her personality.

THE STEREOSCOPE IN OPHTHALMOLOGY, WITH ESPECIAL REFERENCE TO THE TREATMENT OF HETEROPHORIA AND HETEROTROPIA. Designed to Accompany the Phoro-Optometer Stereoscope and the Wells Selection of Stereoscopic Charts. By David W. Wells, M.D., F.A.C.S., Professor of Ophthalmology, Boston University Medical School. Cloth. Price, $2 net. Pp. 145, with 31 illustrations. Boston: Globe Optical Company, 1918.

This is a plea for the more frequent use of the stereoscope in overcoming heterophoria and heterotropia. It is supplementary to the phoro-optometer and the Wells stereoscopic charts. The author discusses heterophoria and its treatment, lays special stress on the beneficial results to be obtained by means of the systematic use of the stereoscope, and explains his own methods. In heterotropia the same treatment is advocated, but if unsuccessful, should be replaced by operation, preferably musculocapsular advancement. As a postoperative measure, he advocates the use of the stereoscope in training the fusion faculty. Several pages are devoted to the discussion of the Haitz binocular location of scotomas by means of the stereoscope, and the adaptability of the phoro-optometer to the Haitz and Bissel charts.

MILITARY SURGERY. By Dunlap Pearce Penhallow, S.B., M.D., Chief Surgeon, American Women's War Hospital, Paignton, England. With introduction by Sir Alfred Keogh, K.C.B., Director-General, Army Medical Service. Original drawings by the author. Second edition. Cloth. Price, $6. Pp. 555, with 226 illustrations. New York: Oxford University Press, 1918.

Penhallow has partly rewritten his book to meet the demands made on physicians and surgeons who are called to treat the war wounded in military or in civil hospitals. He has embodied much of the available material that has resulted from the treatment of all manner of war wounds, thus bringing the text up to date. The Carrel treatment of wounds is described in detail. The author considers it a most important advance, but designates the method as applying "in a scientific manner the treatment which had been advocated sixty years previously by Lister, namely, the treatment of infection by antisepsis." Other methods of treatment are also described. The book is well arranged, well written and illustrated to good purpose.

Social Medicine, Medical Economics and Miscellany

Pyogenic Diplococcus Found in Skin Infections

In various skin infections and infected gunshot wounds seen by Krumbhaar and his associates in a military hospital in France, they found a diplococcus in apparently pure culture that does not seem to correspond with any coccus described in textbooks. In smears from pus and in earlier cultures it is partially or wholly decolorized by Gram's method, so that, on account of its possible occurrence in the spinal fluid in cases of traumatic meningitis, it must be recognized as distinct from the meningococcus. In one case of gunshot wound of the spine, in fact, it was cultivated from the spinal meninges at necropsy, but was differentiated from the meningococcus by agglutination tests as well as the differing sugar actions. The diplococcus in question was first grown from an infected scratch on the finger of one of the workers in the laboratory. In spite of ordinary antiseptic dressing, the infection persisted for over a week, with a tendency to burrow under the skin at the periphery of the infected area. Before its disappearance this produced a slightly raised, rather vesicular circle, with a healing center. During the next two weeks similar infections occurred in scratches on three other fingers, all containing the same Gram-negative diplococcus. Since that time an apparently identical organism has been obtained in another hand infection and in various smears and cultures from infected gunshot wounds. If it should eventually prove to be a new variety, the name *Cuticoccus* (or *Diplococcus cutis*) is suggested.—*Military Surgeon*, 1918, **42**, 502.

Decision on Federal Child Labor Law

By a vote of five to four, the Supreme Court of the United States has decided that the federal child labor law is unconstitutional and invalid. The majority judges were Justices White, Day, Van Deventer, Pitney and McReynolds. Justices Holmes, Brandeis, Clarke and McKenna rendered a dissenting opinion. The law provides that goods manufactured in establishments employing children under 14, or children between 14 and 16 years of age, who work more than eight hours a day, or more than six days a week, or after 7 p. m. or before 6 a. m., may not be shipped in interstate commerce. On the question of whether Congress in regulating commerce among the states had the right to prohibit the transportation of goods manufactured under the condition named, the majority opinion by Justice Day holds:

> The power of the states to regulate their purely internal affairs by such laws as seem wise to the local authority is inherent and has never been surrendered to the general government. To sustain this statute would not be, in our judgment, a recognition of the lawful exertion of congressional authority over interstate commerce, but would sanction an invasion by the federal power for the control of a matter purely local in its character, and over which no authority has been delegated to Congress in conferring the power to regulate commerce among the states.
>
> In our view, the necessary effect of this act is, by means of a prohibition against the movement in interstate commerce of ordinary commercial commodities, to regulate the hours of labor of children in factories and mines within the states, a purely state authority. Thus the act in a twofold sense is repugnant to the Constitution. It not only transcends the authority delegated to Congress over commerce, but also exerts a power as to a purely local matter to which the federal authority does not extend.
>
> The far-reaching result of upholding the act cannot be more plainly indicated than by pointing out that if Congress can thus regulate matters intrusted to local authority by prohibition of the movement of commodities in interstate commerce, all freedom of commerce will be at an end, and the power of the states over local matters may be eliminated, and thus our system of government be practically destroyed.

It is pointed out that the making of goods or the mining of coal are not in themselves commerce, even though the goods were afterwards to be shipped in interstate commerce. If the mere manufacture or mining were part of interstate commerce, it is contended that all manufactures intended for interstate shipment would be brought under federal control to the practical exclusion of the authority of the states, a

result, it is said, certainly not contemplated by the framers of the constitution when they vested in Congress the authority to regulate commerce among the states.

The dissenting opinion by Justice Holmes denies entirely that the principle of the rights of the states enters into the question and says:

> The act does not meddle with anything belonging to the states. They may regulate their internal affairs and their domestic commerce as they like. But when they seek to send their products across the state line they are no longer within their rights. If there were no Constitution and no Congress, their power to cross the line would depend on their neighbors. Under the Constitution such commerce belongs not to the states, but to Congress, to regulate. It may carry out its views of public policy, whatever indirect effect they may have on the activities of the states.
>
> The public policy of the United States is shaped with a view to the benefit of the nation as a whole. The national welfare as understood by Congress may require a different attitude within its sphere from that of some self-seeking state. It seems to me entirely constitutional for Congress to enforce its understanding by all the means at its command.

The case on which this decision was rendered was that of Dagenhart against the Fidelity Manufacturing Company of Charlotte, N. C., the petitioner having sought an injunction to prevent the company from discharging his three children. The federal court for the western district of North Carolina held that the petitioner's contention that the law was unconstitutional was well founded.

Medicolegal

Physician at State Hospital Testifying as to Results of Examination

(Casson v. Schoenfeld et al. (Wis.), 166 N. W. R. 23).

The Supreme Court of Wisconsin, in this action for fraud on one Brickman in the exchange of property, had the question as to whether the examining physician of the male patients who were committed to a state hospital for the insane might properly be permitted to testify as to results of his personal examination of Brickman at the time of his commitment following the exchange of property. The court says that by Section 561q of the Wisconsin Statutes the duties of superintendent of such a hospital are specified, and among the duties prescribed it is provided that such superintendent shall be responsible for the care, health and treatment of the inmates; shall cause to be kept a daily record of each inmate, and shall report monthly to the state board of control the name of each patient during the preceding month with a brief statement of his or her mental and physical condition and form of insanity. The physician examined as a witness in this case, although not the superintendent, was in charge of the male patients of the institution, and all examinations of such patients were made by him, and a report was made by him or under his direction of such examination. Over objection he was permitted to disclose that from the physical examination and the test made of the spinal fluid of Brickman he ascertained that Brickman was suffering from a disease of the brain induced by a serious affliction, that it must have been of from ten to twelve years' standing, and that from the nature of such disease and the condition he then found him in, Brickman must have been deranged and incompetent to transact business affairs for a year at least prior to the transaction in question.

Section 4075 of the Wisconsin Statutes reads, "No person duly authorized to practice physic or surgery shall be permitted to disclose any information which he may have acquired in attending any patient in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician or to do any act for him as a surgeon," etc. This court sees no reason why Section 4075 did not squarely meet the situation in this case and exclude the testimony of one situated as was this physician and prohibit him from giving such information as he did, being the result of his examination, just as well as though he had been called in as a private physician to treat Brickman. It was, as he said, part of his duty to classify the inmates, study their insanity, the cause of it, and their condition to determine whether they were treatable and recoverable and what kind of treatment they were to receive, if any. Even were there no such testimony here, it is manifest that the commitment of individuals to such an institution is for the purpose of treatment and care, and the present high standard of such institutions could not be upheld and maintained if their sole purpose and object was merely to detain such patients, and not give them care and treatment tending to alleviate, if possible, their unfortunate condition. Almost this precise question has been passed on by this court in the case of *Mehegan* v. *Faber*, 158 Wis. 645, 149 N. W. R. 397, wherein the records kept by the superintendent of the Wisconsin Tuberculosis Sanatorium were held to be properly excluded under Section 4075.

The court, therefore, holds that the public official who, as a physician or surgeon learns in that capacity information concerning a patient committed to his care or to him for examination in order that such physician or surgeon may be able to dermine what treatment, if any, should be had, or whether any treatment is possible tending to cure, benefit or alleviate that patient, shall not be permitted to give such information to any one unless by consent of the patient. That a public record is required to be kept by such physician or institution does not affect the rule. A legislative provision for the filing of certain documents as public reports by physicians is not a legislative declaration that the secrecy of Section 4075 as to physicians has been relaxed.

Barring of Actions for Negligence

(Harding et al. v. Liberty Hospital Corporation (Calif.), 171 Pac. R. 98).

The Supreme Court of California says that, notwithstanding the conflict of authority from other jurisdictions, this court is satisfied that it has become the settled rule in California that actions for injuries caused by the negligent acts of another or his agent must be commenced within the period of one year from the date of the alleged injury, and that the fact that the parties stand in contractual relation to each other does not operate to change the rule or extend the time for the commencement of such actions. Here was an action for damages brought by a woman and her husband, who contended that the cause of action set forth in their complaint was one arising out of the breach of the former's contract with the defendant, such breach consisting in the defendant's failure to furnish adequate and competent surgical treatment for her injured limb. But, notwithstanding the elaboration with which the plaintiffs undertook to set forth the terms and provisions of their contract, the court is of the opinion that the gravamen or burden of this action consisted in the alleged negligent acts of the chief surgeon of the defendant, consisting in his unskilful setting of the plaintiff's injured limb, by reason solely of which the plaintiff's alleged injury and damage arose. For this reason, and because of the rule stated above, the court affirms a judgment in favor of the defendant after its demurrer had been sustained to the plaintiffs' amended complaint on the ground that their cause of action as set forth in the complaint was barred.

Waiver of Privilege by Applicant for Insurance

(Sovereign Camp, Woodman of the World v. Farmer (Miss.), 77 So. R. 655)

The Supreme Court of Mississippi, Division A, in reversing a judgment obtained by Mrs. Farmer, the plaintiff, on a beneficiary certificate issued by the defendant, for her benefit, to her husband, holds that the privilege created by Section 3695, Code of 1906 (Hemingway's Code, Section 6380) is personal to the physician's patient, and may be waived by him either before or at the trial, and, since one of the considerations on which the policy or certificate sued on was issued was the waiver by the applicant of such privilege, it followed that his physicians were competent witnesses, although they obtained their knowledge of his condition while treating him professionally. This evidence, however, must be confined to facts tending to prove the insured's state of health after his application for the certificate was made, for, under another statute, the insurer

could not at this time deny the truth of the statements contained in the application, and because of the statute the case in all respects must be tried on the theory that the insured was in good health when the application was made. The testimony of the physicians, therefore, was competent so far as it dealt with matters occurring after the making of the application, but not so far as it dealt with matters occurring prior thereto. However, since the objections to this testimony were not limited to the incompetent portions thereof, they should have been overruled.

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, Oct. 16-18.
American Public Health Association, Chicago, Oct. 14-17.
Delaware State Medical Society, Wilmington, Oct. 8.
Indiana State Medical Association, Indianapolis, Sept. 25-27.
New Mexico Medical Society, Albuquerque, Oct. 7-8.
Ohio State Medical Association, Columbus, Oct. 1-3.
Pennsylvania State Medical Society, Philadelphia, Sept. 23-26.
Vermont State Medical Society, Burlington, Oct. 10-11.
Virginia State Medical Society, Richmond, Oct. 22-25.
West Virginia State Medical Association, Harpers Ferry, Oct. 1-3.
Wisconsin State Medical Society, Milwaukee, Oct. 2-4.

MINNESOTA STATE MEDICAL ASSOCIATION

Annual meeting, held at Duluth, August 28-30, 1918

The President, DR. ARTHUR J. GILLETTE, St. Paul, in the Chair

Prostatic Calculi

DRS. E. S. JUDD and J. L. CRENSHAW, Rochester: In eight and one-half years we have seen and treated or advised treatment in twenty cases of prostatitis in which prostatic calculi were present, and also eleven cases in which it was necessary to operate for the removal of false prostatic stone. In most instances the false stones were removed by intra-urethral methods. Cases of prostatic calculi may be divided into three distinct groups. In two of these groups are cases of true prostate stone as they are formed immediately within the substance of the gland. In the third group the stones are formed elsewhere, usually in the kidney, sometimes in the bladder, possibly in a diverticulum of the urethra, and from there are passed into the prostatic urethra. These are known as false prostatic stones.

The symptoms are those of a severe prostatitis, and often the patient is treated for the inflammation, unaware of the fact that stones exist. If the stones project into the urethra, there will usually be urinary obstruction. In some of the cases, stones have passed through the urethra, and sometimes there is a history of hematuria, although these features are not at all diagnostic. The treatment of all types of prostatic calculi is to remove the stones and remedy the accompanying condition.

DISCUSSION

DR. F. A. DUNSMOOR, Minneapolis: The first patient on whom I operated for bladder trouble was a man who had fallen from a steeple. He had been previously operated on for stone by the crushing method. When I operated on him I found a prostatic stone as described by Dr. Judd. Whenever I have made a diagnosis of prostatic stone I have approached it from the perineal side, and have dislodged the stone and removed it through the urethra.

Derangements of the Semilunar Cartilages of the Knee Joint

DR. M. S. HENDERSON, Rochester: A semilunar cartilage should not be molested unless there has been more than one attack of locking. The term "loose cartilage" is not correct. A ripped or torn internal semilunar will be found in the majority of cases. There is no uniform type of tear, but there are two common types, namely, the middle three fifths, torn longitudinally and placed in the intercondylar notch, the "bucket-handle" tear, and the anterior extremity torn longitudinally and hanging as a loosely attached body readily nipped between the joint surfaces. The symptoms that should be present are: history of trauma, usually indirect; pain; disability; locking of the joint; effusion, and a negative roentgenogram. In atypical cases, operation should be done only after very careful consideration.

DISCUSSION

DR. R. E. FARR, Minneapolis: The knee joint can be opened easily under local anesthesia. As to the danger connected with the operation, if a patient can get along without operation, it is better for him because sometimes with the greatest care and aseptic precautions infection may take place.

DR. EARLE R. HARE, Minneapolis: No part of the body should be approached with more care, so far as asepsis is concerned, than the knee joint. As Dr. Farr said, if a patient can get along without an operation he is much better off than if he has an infection of the joint, which almost invariably results in a bony ankylosis that cannot be treated easily.

DR. M. H. HENDERSON, Rochester: The danger of infection of the knee joint has been somewhat overrated.

Transrectus Incision in the Upper Abdomen

DR. ROBERT EMMET FARR, Minneapolis: Above the navel the transverse incision offers the most adequate exposure of the various pathologic conditions. The gallbladder, stomach, and even the appendix, if not adherent in the pelvis, can readily be dealt with. In most instances retraction of the abdominal wall, both upward and downward, is possible so that good exposure is usually obtained. By supplementing this incision with the near midline vertical incision when necessary, one is afforded the most ideal exposure it is possible to obtain. In the matter of choosing incisions, a great deal can be done by varying the size and direction according to the pathologic condition anticipated. In closing the incision the relaxation afforded by the proper posture of the patient makes it possible to unite the edges of the transverse cut in a relatively short time. The transverse incision always comes together more easily than the vertical.

DISCUSSION

DR. J. W. LITTLE, Minneapolis: I have not been wedded to the transverse incision. I seldom need it for lower abdominal work. For upper abdominal work it is of advantage at times. As a routine practice, the transverse incision is too much surgery.

DR. W. H. MAGIE, Duluth: I have done quite a little work in the upper abdomen through the transverse incision for at least eight or ten years. This incision is particularly advantageous in some cases of gallbladder trouble or diseases of the ducts; also in diseases of the stomach and pylorus, when one is not sure of the diagnosis. It gives splendid access to the organs in the upper abdomen. My experience with this incision has been very satisfactory.

Ectopic Pregnancy

DR. C. B. LEWIS, St. Cloud: I have had thirty-three cases of ectopic gestation in the past ten years, occurring in twenty-nine patients. Thirty-one cases were subjected to operation with the loss of two patients, a mortality of 6 per cent. Two patients were in a dying condition when first seen, surviving the severe hemorrhage and shock only one and two hours, respectively. Abdominal pain was present in all cases, varying from the classical crisis with the following shock from hemorrhage to the more or less continued abdominal distress, which brought the patient for examination. The former condition with its clearcut evidence of intraperitoneal hemorrhage is not usually mistaken, but the slow process with its distress from tubal distention or slight rupture is very confusing. In a case of irregular bleeding and abdominal pain, one must have constantly in mind three conditions, namely, intra-uterine pregnancy with threatening abortion; inflammatory tubal disease, especially hydrosalpinx and pyosalpinx, and extra-uterine pregnancy.

Recurrent Inguinal Hernia

Dr. J. C. Masson, Rochester: In looking over the statistics of the Mayo Clinic from 1907 to 1918 I find that 5,364 inguinal herniotomies have been done. Included in this number were 330 operations for recurrence; seventy of these were for recurrence following operation done here, and the remaining 260 were operations done elsewhere. This included twenty-nine bilateral recurrences, which were counted as fifty-eight operations. In 330 operations for recurrent inguinal hernia, 258 patients had had one previous operation; forty-four had had two previous operations; twenty had had three previous operations, and eight had had four previous operations. In 256 cases in which the time of recurrence is recorded, 189 recurred in the first six months; twenty-six recurred between six and twelve months; nineteen recurred between one and two years, and twenty-two recurred between two and eight years.

The operation I perform is a slight modification of the Andrews, which in turn is a combination of the Halstead and Bassini principles. The only exceptions I ever make to this technic are: (1) to follow the Ferguson technic in all hernias associated with undescended testes, and in a few infants (2) to utilize the rectus muscle, according to Bloodgood, in all cases in which the internal oblique is not sufficiently strong, (3) in a very few cases to follow the Halstead technic, and (4) in extra difficult cases, in old men, occasionally to cut all the structures of the cord at the internal ring, close the canal much the same as in the treatment of a ventral hernia, and perform an orchidectomy.

Fractures of the Head of the Radius

Dr. L. E. Daugherty, St. Paul: Fractures of the head of the radius occur frequently. The treatment of the two most common types of fracture, that is, the splitting of the bone and the impaction of the anterior lip, is simple. The elbow is put at rest in a right angle splint, and this is done more to prevent rotation than flexion. The splint should remain in place at least three weeks. Recovery with complete function has been good. In case portions of the head are broken off and act as foreign bodies, they will sooner or later have to be removed. In old neglected fractures of this character in which there is a distinct limitation of motion, we need not be afraid to resect the radial head, for it can be done without loss of function and with no deformity.

The Surgical Importance of Abdominal Adhesions

Dr. William R. Bagley, Duluth: The elimination of adhesions following operative work should be the earnest consideration of the surgeon. To accomplish this, one should first make as small an incision as possible; should get more of the sutures covered, especially those not of plain catgut; should utilize the omentum in covering all raw surfaces, and should keep the small intestine as remote as possible from the field of operation. In hysterectomies a long flap of the peritoneum should be made on the anterior surface of the uterus, and all raw surfaces covered. A frequent change of position in bed should be encouraged, not overlooking the raising of the foot of the bed in pelvic cases when permissible. The abdominal dressing has an important bearing on the formation of adhesions.

Paraffin Treatment of Burns

Dr. Arthur N. Collins, Duluth: In dressing my burn cases for the first time no attempt at cleansing the surface is made beyond spraying lightly with a 3 to 5 per cent. solution of dichloramin-T over which the paraffin is painted. Blisters are punctured but not removed at the first dressing. At subsequent dressings, any loose or sloughing skin is trimmed off with sharp scissors. The secretions are removed by spreading smooth sheets of sterile gauze over the surface and blotting by gentle pressure. A cotton pad with a twisted pedicle for a handle may be used for this pressure. The surface is then ready for drying. This is done thoroughly with an electric hair drier or blower. Where there is infection or sloughing skin with accompanying foul odor, the dried surface is then sprayed with dichloramin-T. In some places this may cause pain. If this is immediately covered with liquid petrolatum, the pain is relieved. For this purpose two atomizers are held in the left hand while the syraying bulb is operated with the right. One atomizer contains the dichloramin-T in an oily solution, and the other contains sterilized liquid petrolatum. If at any time during the application of the dichloramin-T the patient complains of pain, the liquid petrolatum may immediately be sprayed on at that point. The surface is then ready for the paraffin crust. Ordinary paraffin with 2 per cent. of liquid petrolatum to increase flexibility is used. The mixture is heated in a double boiler and is brushed on. It may be used in a paraffin atomizer with a water jacket, if preferred. It may be cooled down until a few drops on the back of the hand or wrist are not uncomfortably hot. It is daubed on gently at first. Much stroking with the brush over the raw surface seems to cause pain. The raw surfaces are covered thinly at first. If the patient complains of the heat, an assistant may apply the electric blower or drier to cool the freshly coated surface following the brush. After the burned surface has been coated gently and is hardened, a second coat is applied and extended outward for 1 or 2 inches on the surface of the healthy skin. Before this dries, thin sheets of cotton fiber are spread over the soft crust and are brushed over with the paraffin, which impregnates the fiber with the crust. When this is hardened, absorbent cotton is placed thickly over the most dependent edges to absorb secretions, which commonly leak out. The dressings over large body burns may be held in place by a band, swaths, slit nightshirt or other device which may later be cleaned, sterilized and used again, thus contributing to a large saving in bandage material. The dressing is renewed in twenty-four hours.

Surgical Treatment of Traumatic Epilepsy

Dr. A. C. Strachauer, Minneapolis: In cases of traumatic epilepsy operation should be done as early as possible after the incidence of the convulsive attacks, that is, before epileptogenic changes occur in the brain. The likelihood of betterment diminishes in inverse ratio to the duration of the epilepsy. In well established cases, even though the attacks are not stopped entirely, they are apt to be lessened in severity and the interval between their occurrence prolonged, provided the operation results in the removal of a definite macroscopic lesion. Scarred and adherent dura, when extensive, would better be removed entirely. Small adhesions may be separated carefully without sacrificing the dura. Cysts should be evacuated and the sac removed or at least partially removed. A cortical scar, when present, should be excised clean and smooth, down to the white matter, if necessary. Foreign bodies, such as a bullet or piece of metal, should be removed carefully, and when necessary through a clean cut incision into the brain cortex rather than through laceration of the cortex. Edema of the pia is frequently present, and may be relieved by numerous small needle pricks. Cases of persistent headache, dizziness, changed character and mental derangement following trauma have been improved and cured by the operation of decompression.

Therapeutic Effects of Overfeeding in Pernicious Anemia

Dr. T. A. Peppard, Minneapolis: Three cases of pernicous anemia have been studied with reference to the effect of forced feeding. In two cases, possibly in all three, a positive nitrogen balance was secured without difficulty. During the gain in weight, symptomatic improvement took place, and there was a distinct betterment in the blood picture.

Hemolytic Icterus: Report of Two Splenectomies

Dr. J. P. Schneider, Minneapolis: These two cases were of the acquired type. Both exemplify very well the splenic crises, such as headache, prostration, vomiting and deeper jaundice. In one patient the presence of gallstones was announced by biliary crises distinctly more painful and sharp in nature. It is important to keep the distinction in mind. Pregnancy added to the liver's burden with the resulting toxemia. In both patients the high duodenal pigment values confirmed the diagnosis. In the second patient we anticipated considerable disease in the liver itself because of very high

values of urobilinogen. This patient is regenerating liver cells rapidly, but even after sixty days following ablation of the spleen, the damage has not been repaired entirely, for while urobilinogen has fallen from 16,000 to 600 units, its presence even in this amount indicates a residual pathologic condition of hepatic cell function. It is conceivable that this patient, if left unrelieved, would in time have developed a biliary cirrhosis. Urobilin, the pigment characteristically increased in the bile in hemolytic icterus, shows normal values in the first patient the second week and the second eight weeks after splenectomy.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, Boston

August, 1918, **8**, No. 8

1 Health and War. I. Fisher, New Haven, Conn.—p. 559.
2 Rat and Infantile Paralysis. M. W. Richardson, Boston.—p. 564.
3 Life Table for City of New Haven. L. I. Dublin, New York.—p. 580.
4 Inexpensive Field Plating Outfit for Bacterial Examination of Milk. F. O. Tonney and J. L. White, Chicago.—p. 582.
5 Chemical Analyses of Bacteriologic Bouillons. F. C. Cook and E. LeFevre, Washington, D. C.—p. 587.
6 Survival of Typhoid Bacilli in Sour Milk. P. Marsh.—p. 590.
7 Efficient State Health Program against Venereal Diseases. H. G. Irvine.—p. 594.
8 Professional Instruction in Public Health in United States and Canada. E. C. Howe.—p. 600.
9 Typhoid: Its Nature, Mode of Spreading and Prevention. W. Budd.—p. 610.
10 Simple Automatic Thermostat for Use in Electric Incubator. F. O. Tonney, Chicago.—p. 584.

Annals of Surgery, Philadelphia

August, 1918, **68**, No. 2

11 Industrial Medicine and Health Insurance. T. W. Huntington, San Francisco.—p. 113.
12 *Value of Transfusion of Blood in Treatment of Wounded in War. A. Primrose, England.—p. 118.
13 *Rôle of Evacuation Hospital in Care of Wounded. D. F. Jones, Boston.—p. 127.
14 Relation of Orthopedics to General Surgery. G. G. Davis, Philadelphia.—p. 133.
15 Malignant Tumors of Jaws. A. J. Ochsner, Chicago.—p. 136.
16 *Recurrent Dislocation of Lower Jaw. J. B. Blake, Boston.—p. 141.
17 Two Cases of Enlarged Thyroid Producing Suffocation by Displacement Beneath Sternum. H. B. Delatour, Brooklyn.—p. 146.
18 Application to Empyema of Principles Underlying Use of Antiseptics. E. K. Dunham, New York.—p. 148.
19 Hemorrhage from Aneurysm of Internal Carotid Artery, Following Septic Sore Throat. J. Ransohoff, Cincinnati.—p. 152.
20 *Postoperative Thoracic Drainage. W. Meyer, New York.—p. 156.
21 *Treatment of Diseases of Costal Cartilages; Report of Cases. A. V. Moschcowitz, New York.—p. 168.
22 *Surgical Treatment of Cirrhosis of Liver and Their Complications. W. J. Mayo, Rochester, Minn.—p. 183.
23 Cholecystitis. F. G. N. Starr and R. R. Graham, Toronto, Canada.—p. 188.
24 *Method of Permanent Gastrostomy. F. T. Stewart, Philadelphia.—p. 194.
25 Spastic Ileus (Spasmodic Intestinal Obstruction); Report of Case. L. Freeman, Denver.—p. 196.
26 *Right Colectomy. G. W. W. Brewster, Boston.—p. 203.
27 Fistula of Colon. C. H. Mayo, Rochester, Minn.—p. 211.
28 Treatment of Direct Inguinal Hernia in Adults. L. W. Hotchkiss, New York.—p. 214.
29 *Ligation of Abdominal Aorta; Ligation of First Portion of Left Subclavian. C. A. Hamann, Cleveland.—p. 217.
30 Use of Pedunculated Flap in Reconstructive Surgery. J. S. Davis, Baltimore.—p. 221.
31 Case of Hereditary Osteopsathyrosis. W. I. Terry, San Francisco.—p. 231.
32 Amputations of Leg. I. Olmstead, Hamilton, Ont.—p. 235.
33 Results Obtainable in Treatment of Fractures. *W. L. Estes, and others.—p. 238.

12. **Transfusion of Blood in War.**—Primrose has mainly employed a modification of the syringe and cannula method introduced by Lindeman and in one case found the two-way stopcock apparatus of Unger answered admirably. Primrose has frequently transfused 1,000 c.c. and in one case 1,140 c.c. from one donor. In none of these instances has the donor suffered other than very temporary inconvenience. The desirable amount must be determined in the individual case, but in hemorrhage one aims at from 600 to 700 c.c. as a minimum while in the majority of instances of severe hemorrhage it would appear that a larger amount, say 1,000 c.c., is more effective. At the last meeting of the Interallied Surgical Congress at Paris, in March, 1918, it was concluded that the results obtained by the transfusion of blood justify its being looked on as the method of choice in the treatment of serious hemorrhage, both primary and secondary. It was agreed that the method of transfusion employed should make it possible to measure the quantity of blood transfused. Regarding the danger of hemolysis it was concluded that at advanced posts it is justifiable to resort to transfusion even if it be impossible to test the agglutination, as the risk of serious results is relatively small, but it should be tested in all other units.

13. **Rôle of Evacuation Hospital.**—From experience at a base hospital, Jones is convinced that the evacuation hospitals and mobile units should first be equipped with staffs of surgeons of well known ability and experience, after which the base hospitals should receive their 40 per cent. of experienced surgeons, if it is possible to get them.

16. **Recurrent Dislocation of Lower Jaw.**—Tying up the coronoid process or the tissues inserted on it to the zygoma, is suggested by Blake as an operation in these cases. This procedure is less difficult than any careful and accurate work on the joint itself, and further it acts to a much greater mechanical advantage, in that the coronoid is 3 or 4 cm. in front of the joint and is by so much in a better position to withstand trauma tending to dislocation. A case is cited in which this procedure was employed successfully. An incision was made along the lower border of the zygomatic arch and the fibers of the masseter separated from it. This incision was well above Stenson's duct and parallel to the facial nerve fibers. With some difficulty, the coronoid process was reached; it was much deeper than had been anticipated, and Blake was not able to do what he had originally planned; this was to drill through the tip of the coronoid, thread a piece of silver wire through the hole and lace this over the zygoma. He therefore looped the wire first over the zygoma and then brought it down and carried it through the insertion of the temporal muscle, and the periosteum on the front of the coronoid, twisted the ends together, flattened it, and closed the wound without drainage. The wire loop was long enough to allow the jaw to open for 2 cm., or 1 inch between the incisors. The masseter was carefully sutured to its origin; bandages held the jaw closed, and the wound healed by first intention. The jaw was immobilized three weeks. More than a year after the operation, his jaw is normal and reliable in every way, the excursion being about 4 cm. at the incisors.

20. **Postoperative Thoracic Drainage.**—Meyer is convinced that the successful issue of surgical work within the thorax seems best assured by combining immediate, complete closure of the incision with an efficient method of simple and safe drainage of fluid and air—without allowing the latter to regurgitate into the chest. Kenyon's method of draining empyema in children has been found to be useful also for postoperative thoracic drainage in general. It is simple, safe and easy of execution. It permits of satisfactory observation of the quality and quantity of the effused fluid. Kenyon's method of postoperative drainage fulfils Sauerbruch's demand that the thorax be closed air-tight and water-tight after intrathoracic operations. Yet, it permits of draining off, in an efficient manner, the secretions of the pleura, which follow the majority of intrathoracic operations, and usually are not sterile. The introduction of Kenyon's method of drainage, therefore, bids fair to mean a long step forward in the evolution of thoracic surgery. It greatly adds to the safety of intrathoracic surgical work, and should, for the present at least, be employed after every operation on the thorax in which the free pleural cavity, particularly a "virgin-pleura," had to be traversed.

21. **Treatment of Diseases of Costal Cartilages.**—Five cases are cited and analyzed by Moschcowitz. Diseases of the

costal cartilages may be caused by any one of the pus-producing germs. The infection is cause most frequently by the tubercle bacillus; next in frequency appears to be the typhoid bacillus. Cartilage exposed in an infected wound does not heal, and practically always forms a sinus. Given the same conditions, that is, exposed cartilage, plus infection, a relapse is almost certain to occur, even if a portion of the diseased cartilage has been excised, apparently well beyond the infected area. If the conditions are favorable, that is, in the absence of infection, or where only slight infection exists, the operating surgeon may take the risk and close the wound entirely; under no circumstances should a would of this nature be drained, and least of all with gauze. The most certain procedure is to remove the offending cartilages throughout their entire extent, so that not even a trace of exposed cartilage is visible in the wound. If any portion of the sixth, seventh, eighth, ninth or tenth costal cartilages is diseased, it is necessary to remove all these cartilages in toto, in order to bring about healing. Moschcowitz sounds a warning that some of these patients do not stand operations well. In a number of cases the operation had to be terminated rather abruptly, because the patient went into a condition of shock, even when there was no untoward accident, such as perforation of the pleura or pericardium or unlooked for hemorrhage.

22. **Surgical Treatment of Cirrhoses of Liver.**—Mayo calls attention to splenectomy and similar procedures as a ready means of reducing the portal circulation for the purpose of relieving the subnormal liver of its overload.

24. **Method of Permanent Gastrostomy.**—Stewart makes an incision from a point just below and to left of the ensiform cartilage downward parellel to the median line for 3 or 4 inches. About 2 or 2½ inches to the left of this incision a second cut is made, the upper end of which is on a level with the upper end of the first incision, the lower end of which is on the level with the lower end of the first incision. The lower extremities of these incisions are connected by a transverse incision. The rectangular cutaneous flap thus outlined is dissected free from the subjacent deep fascia as far as its base, and the two long margins sutured together with catgut over a catheter, the eye of which remains uncovered below the lower end of the flap. The catheter with its enveloping skin is drawn to one side, the underlying rectus muscle split longitudinally, and a portion of the anterior wall of the stomach drawn from the abdominal cavity. A small transverse opening is made in the exposed gastric wall, the inferior extremity of the catheter pushed into the stomach through the opening, and the rim of the lower end of the dermal tube enveloping the catheter sutured with catgut to the edges of the opening in the stomach. The lower half of the dermal tube is buried in the wall of the stomach in the same manner as the catheter is buried in the Witzel operation. The upper end of the canal thus formed by the inversion of the anterior wall of the stomach is sutured to the abdominal wall, and the split rectus muscle approximated with catgut around the upper half of the dermal tube. The skin about the raw surface which remains is undermined, and, beginning at the lower left corner of the oblong defect, sutured, the sutures being inserted farther apart on the right than on the left, until the lower margin of the external orifice of the dermal tube is reached, when the suture line bifurcates to embrace the new stoma. The scar thus resembles a Y, the long tail of which is slightly convex toward the median line. The catheter is fastened to the skin with a catgut suture and should remain in place until the completion of healing, after which it may be withdrawn, to be reinserted only at the time of the feedings.

This method of gastrostomy is designed for those patients, usually suffering from irremovable esophageal carcinoma, who must for the rest of their lives be nourished through an artificial opening in the stomach. Stewart performed the operation five times. One patient died at the end of ten days from pneumonia. Three lived for periods ranging from three to six months. One lived one year, dying of suppurative cholangeitis. This patient had an ulceration of the gullet which was diagnosticated as carcinoma. After several months of esophageal rest, however, the ulcer healed and swallowing became easy. The gastrostomy was therefore no longer kept in use and its lumen gradually contracted, so that at the end of a year only a fine probe could be introduced.

26. **Right Colectomy.**—A preliminary report is made by Brewster of the results in a series of nineteen operations in which the right colon was excised for relief of symptoms which were attributed to blocking of feces in the cecum. In summing up the result of the operations in the nineteen cases, Brewster is convinced that in cases of right-sided obstruction with stasis in the cecum or ileocecal region the result of mechanical or apparently mechanical causes, if unrelieved by any palliative method of treatment, may be successfully cured by resection of the right colon. The immediate result of the operation shows it is an operation which can be done without undue risk: twenty cases reported by Mayo, twelve by Johnson, and this series of nineteen, without a mortality, but it is too serious to be undertaken except for very definite conditions of incurable partial obstruction. The indications for excision are dilatation of the cecum, extreme mobility, presence of adhesions in patients unrelieved by any palliative treatment and whose symptoms lead to chronic invalidism.

29. **Ligation of Abdominal Aorta.**—Case 1.—Ligation of the abdominal aorta, just above its bifurcation, for a pelvic tumor, mistaken for an aneurysm; survival of patient for six months without gangrene of the extremities. Death due to hemorrhage from a bedsore. The main points of interest in this case seem to be the following: First, the fact that the patient lived six months after ligation of the abdominal aorta just above the bifurcation, without the appearance of gangrene of the extremities. Second, the partial restoration of the lumen of the vessel, after apparent complete obliteration by a firmly tied silk ligature. Third, the reappearance of the femoral pulse on the third day. Inasmuch as the aorta was not found to be completely obliterated, in this case, Hamann believes it can hardly be said that proof is afforded that collateral circulation can develop after ligation of the aorta to a sufficient extent to prevent gangrene. It is his belief that ligation of the aorta below the origin of the inferior mesenteric is a justifiable procedure in cases of iliac aneurysm, for instance, and that it affords fair chances for recovery and cure.

Archives of Internal Medicine, Chicago

August, 1918, **22.** No. 2

34 *Frequency of Lead, Turpentine and Benzin Poisoning in Four Hundred Painters. L. I. Harris, New York.—p. 129.
35 Practical Identification of Endothelial Leukocytes in Differential Blood Counting. F. A. McJunkin and A. Charlton, Milwaukee.—p. 157.
36 *Blood Sugar in Thyroid and Other Endocrine Diseases. N. W. Janney and V. I. Isaacson, New York.—p. 160.
37 Influence of Thyroidectomy and Thyroid Diseases on Protein Metabolites. N. W. Janney and V. I. Isaacson, New York.—p. 174.
38 Studies in Thyroid Therapy. N. W. Janney, New York.—p. 187.
39 Nitritoid Crises After Arsphenamin Injections. L. Berman, New York.—p. 217.
40 *Clinical Report of Nonspecific Protein Therapy in Treatment of Arthritis. R. G. Snyder, New York.—p. 224.
41 Serologic Localization of Organic Brain Lesions. J. M. Retinger, Chicago.—p. 234.
42 *Treatment of General Paresis. C. A. Neymann and N. H. Brush, Baltimore.—p. 245.

34. **Lead, Turpentine and Benzin Poisoning in Painters.**—This study of painters was undertaken by Harris to obtain a more concise idea of the extent to which actively employed workers, most of whom thought themselves in excellent health, gave evidence of damage inflicted by lead paints. One hundred and sixty-three of the active cases of lead poisoning were found among the 402 painters examined. All of these showed definite clinical signs of plumbism; seventy-two of the active cases were found to have lead in the urine in addition to clinical evidence. Thirty-five were found to have lead in the urine without manifest clinical signs. At least 70 per cent. of all those examined gave a fairly clear and recognizable history of one or many attacks, and 142 painters gave a history of recent severe intoxication.

Varnish removers containing acetone and benzol were reported to have caused severe air hunger. Most of the painters were emphatic that benzin had caused them more discomfort and illness than all the other volatile agents; its

effects seem to be more lasting. Most painters when overcome were quickly relieved when taken into the open air.

Practically 60 per cent. of the recent cases of turpentine and the related type of intoxications were found among the 163 active and thirty-five latent lead poisoning cases. Forty-seven of the 142 recent cases had suffered from frequent and moderately painful urination. Occasionally, symptoms that indicated strangury with bloody urine were described. Twenty-three of this group complained of frequent attacks of vertigo.

A comparatively small number survive as active members of the trade after having attained the age of 50 years. Sixty-three negative cases were engaged at the painter's trade for a period of from ten to nineteen years. Most of these were less than twelve years at this work. A satisfactory history with reference to the use of alcohol was obtained in only 304 cases. More than 21 per cent. were total abstainers, an almost equal number drank excessively, while about 55 per cent. drank very little and only occasionally. Alcoholic indulgence, therefore, did not seem to be a marked predisposing factor toward lead poisoning, as it so frequently has been found.

Under the head of precautions against lead poisoning may be mentioned the drinking of milk before and during work. Harris found that while forty-five painters were in the habit of regularly taking one glass a milk per day, and eighty-one regularly drank from a pint to a quart per day, the remaining 276 were extremely lax in this particular. Eighty-seven painters of all the active cases of plumbism gave a history of recent colic. One hundred and seventeen of the active cases of plumbism suffered from marked and persistent constipation. Seventy-five of the active cases complained of frequent and severe headache, usually in the frontal region. The blue line on the gums was found in a total of twenty-two, or a little less than 14 per cent. of all active cases, in only one of the latent cases, and in a little less than 6 per cent. of all the painters examined.

Of the 162 positive or active cases of plumbism, seventy-five gave a definite reaction showing lead in the urine. The blood of 209 persons was examined for basophilic red cells, with the result that this sign, like the lead line, was found to be of limited practical value. A marked secondary anemia was found in eighty-six active cases, fourteen latent cases, twenty-four borderline cases and forty-seven negative cases. Evidence of arteriosclerosis was found in sixty-three persons, or 26 per cent. of those in whom blood pressure observations were made. Twenty persons showed by the presence of albumin, casts and other physical signs the presence of chronic interstitial nephritis. Backache was mentioned by ninety-one of the 162 active cases. Of the 162 patients who had active manifestations of plumbism, only ten gave a positive Wassermann reaction; in four a doubtful reaction was reported.

Loss of weight and muscular strength was a surprisingly common complaint. Pains in various joints were mentioned by fifty-one of the 162 men who showed evidence of active plumbism, and fifty-five complained of a dull pain in the chest. Thirty gave a history of having frequently had a distinct metallic taste in the mouth.

Of all cases of chronic bronchitis 59 per cent. were found among the cases of active lead poisoning. In two of the active cases of plumbism the men had moderately advanced pulmonary tuberculosis with tubercle bacilli in the sputum. The total of advanced and incipient cases was twenty, and inclusive of suspected cases thirty. Seventeen cases of bronchial asthma were found in this series; eight of these were cases of active plumbism. Acne, especially on the back and face, and chromophytosis were very frequent. Ninety painters had a fairly marked pyorrhea alveolaris, and 104 showed marked decay of the teeth and lack of care. Chronic pharyngitis was found in 127 painters; hypertrophic rhinitis in twenty-eight cases, and marked deviation of the septum in 147 painters. In only fifteen was marked hypertrophy of tonsillar tissue found.

36. **Blood Sugar in Endocrine Diseases.**—Experimental proof that hypoglycemia results from hypo-endocrine function was obtained in the case of the thyroid gland, where hypoglycemia regularly developed after thyroidectomy. Explanation is thus afforded for the low blood sugar value observed in myxedema, cretinism, Addison's disease and pituitary disease and other less clearly defined endocrine conditions such as muscular dystrophy. The increased tolerance to glucose as determined by testing the urine in such diseases of the ductless glands is probably to be best explained as due to the hypoglycemia present in these conditions. Delay in the assimilation of glucose from the blood was found to follow thyroidectomy in animals by employment of a blood glucose tolerance test. The same change was demonstrated in cretinism, exophthalmic goiter, and hypophysial disease. Determination of the fasting blood sugar value and the blood glucose tolerance test are useful in the diagnosis of endocrine diseases.

40. **Nonspecific Protein Therapy in Treatment of Arthritis.**—Typhoid vaccine from the laboratories of the board of health was used. The decision in this matter was influenced by the consideration that it would be easy to make this method of treatment accessible to the general practitioner in the future if the initial success should prove to be of permanent character. This was contrary to the advice of Miller and Lusk, who said that they were unable to obtain reliable results from stock vaccines. They used their own freshly prepared vaccine. The dose of vaccine was administered in 10 c.c. of freshly prepared physiologic sodium chlorid solution. One hundred and ten patients were treated. In about 60 per cent. of the cases, one injection abruptly terminated the acute attack. A large majority of them had been unsuccessfully treated by the usual rheumatic remedies before coming to the hospital. Thirty per cent. required from one to five injections. The greater number of these obtained immediate relief from pain, although the permanence of the cure has not been established. Ten per cent. were unimproved. After repeated injections, marked improvement was obtained in 50 per cent. of the subacute cases, considerable improvement in 25 per cent., and only slight improvement in the remaining 25 per cent. The greatest improvement follows the first dose. It was frequently noted that intractable or obstinate cases did not improve until doses sufficiently large to produce a severe reaction were given. Sometimes one severe reaction was sufficient; at other times it required several marked reactions to effect a definite improvement in the patient's condition. In the chronic cases, those which have persisted for periods lasting from one to ten years, even those with marked ankylosis, a moderate improvement in the mobility of some of the joints was noted in almost all cases. This increased mobility was particularly noted in the joints of the upper extremities.

42. **Treatment of General Paresis.**—Twenty-four cases of general paresis, treated alternately once a week with arsphenamin serum and mercurialized serum, are described by Neymann and Brush. Six patients were so markedly improved that five of them were able to resume their occupations. All of them gave practically negative serologic findings. The average duration of the present status is fifteen months. The authors consider these are arrested cases. Six others were somewhat improved, four resuming their occupations, while two are continuing their treatment. All of these were somewhat improved serologically. Six showed no clinical or serologic improvement, except in one case. This is undoubtedly a clinical remission; the serologic status remained unchanged. The last six were harmed by the treatment. One developed a paraplegia; two became incontinent; one died of acute arsenical poisoning and one developed an arsenic neuritis; finally, one died in convulsions, possibly as the result of the treatment. Whenever the serologic findings tend to become negative, they usually change in the following order and manner: The cell count is first reduced to normal. The Wassermann reaction then becomes negative. The paretic colloidal gold curve changes to an atypical or negative one. The globulin tests became less marked, but traces of globulin usually remain. Twenty-three per cent. of all the paretic patients examined show negative blood Wessermann reactions.

Arkansas Medical Society Journal, Little Rock

August, 1918, **15**, No. 3

43 Toxemias of Pregnancy. J. T. Altman, Jonesboro.—p. 45.
44 Danger of Delay where Submucous Resection of Nasal Septum is Indicated. Technic Involved. L. H. Lanier, Texarkana. —p. 48.
45 Common House Fly. O. L. Howton, Osceola.—p. 51.

Boston Medical and Surgical Journal

Aug. 29, 1918, **179**, No. 9

46 Relation of Food Idiosyncrasies to Diseases of Childhood. F. B. Talbot, Boston.—p. 285.
47 Clinical Study of Four Hundred Patients with Bronchial Asthma. I. C. Walker, Boston.—p. 288.
48 *Present Status of Immunization in Hay-Fever. J. L. Goodale, Boston.—p. 293.

48. **Present Status of Immunization in Hay-Fever.**—Goodale advises patients to report, if possible, ten weeks before the expected onset of their attacks, although a shorter period is usually sufficient. The ordinary course of procedure is to inject from 1 to 3 minims of the 1:50,000 dilution of pollen extract of the following plants: willow, poplar, maple, birch, oak, grass, rose and ragweed. This causes in nearly all cases subcutaneous swelling ranging from 1 to 3 cm. in transverse diameter, lasting from one to three days. After the reaction from the first injection has subsided, one may then double the amount, and a few days later give twice the amount of the second injection. The next higher strength of 1:5,000 is taken, and three injections of this are given, ranging from 3 to 7 or 8 minims. Next a similar quantity in three doses is given of the 1:2,000, and finally the full strength of 1:500, in doses ranging from 5 to 10 minims. The number of injections required during the first year has ranged from 6 to 15 depending on the rapidity with which the dosage can be increased.

If the person reports at the beginning of his hay-fever, Goodale has adopted the method of giving small daily injections, without waiting for a subsidence of the reactions, the successive injections being made in the forearms and upper arms, respectively. A large proportion of patients so treated have had the symptoms disappear in the course of a week, which would ordinarily have persisted for six weeks. With the omission of treatment the sensitization slowly and progressively returns, until at the beginning of the following years the skin tests show the same degree of intensity which they did originally. Since the spring of 1914 Goodale has examined 330 cases of hay-fever. Of the true anaphylactic type, ninety were from grasses, 237 from ragweed, five from maple, four from roses, three from oak, one from willow and five from birch. Of these patients, 123 have received desensitizing treatment for two or more years.

No improvement was noted in seven cases. Improvement as compared with previous years, but showing, nevertheless, troublesome symptoms for a short time was observed in forty-six cases. Very definite improvement, apparently beyond criticism, was observed in fifty-nine cases. Five patients showed no hay-fever for two or more years.

Florida Medical Association Journal, Jacksonville

July, 1918, **5**, No. 1

49 Civil Responsibility of Medical Man. J. F. Glenn, Tampa.—p. 1.
50 Cooperation. B. L. Arms, Jacksonville.—p. 6.
51 Neglected Points in Management of Communicable Diseases. W. W. MacDonell, Jacksonville.—p. 9.

Maine Medical Association Journal, Portland

August, 1918, **9**, No. 1

52 Nonspecific Arthritis from Genito-Urinary Infections. C. N. Peters, Portland.—p. 1.
53 Indiscreet Remarks by Physicians in Malpractice Cases. H. T. Weston, Hartford, Conn.—p. 7.

Medical Record, New York

Aug. 31, 1918, **94**, No. 9

54 Some Points in Management of Diseases of Heart. E. E. Cornwall, Brooklyn.—p. 353.
55 *Place of Ipecacuanha in Treatment of Auricular Diseases of the Heart. L. F. Bishop, New York.—p. 356.
56 Clinical Study of Variable Therapeutic Potencies of Galenicals, and Their Inherent Unreliability. H. Beates, Jr., Philadelphia. —p. 357.
57 *Therapeutic Action of Ouabain Strophanthin Gratus. E. Zueblin, Cincinnati.—p. 359.
58 Prodromal Symptoms of Nervous Form of Arteriosclerosis. H. Climenko, New York.—p. 366.
59 Improved Operation for Internal Hemorrhoids. W. L. Secor, Kerrville-on-the-Guadalupe, Texas.—p. 370.

55. **Ipecac in Treatment of Diseases of Heart.**—In disorders of the auricle, which Bishop believes are very often of toxic origin, ipecacuanha seems to be a valuable adjunct to digitalis. He prescribes one-half grain of powdered digitalis, and one-eighth grain of powdered ipecacuanha. Nausea is not hastened, and the effect of the digitalis seems to be improved. In a person with an untreated fibrillation, the pulse being very rapid and irregular, Bishop orders powdered digipuratum, gr. xviii, and powdered ipecac, gr. v, made into twelve powders. One every four hours until four are taken; one every six hours until four are taken; and one every eight hours until four ar taken. Ipecacuanha is a drug with active physiologic and therapeutic qualities. It has definite relations to the functions of the blood vessels. In large doses it is capable of doing much harm. It has certain analogies to digitalis which suggest it as an adjuvant.

57. **Therapeutic Action of Ouabain Strophanthin Gratus.**—The ouabain preparation used by Zueblin in his study were the sterile ampules containing the crystallized substance in a dilution from 1:4,000 of sterile saline. The contents of the ampules, assayed pharmacologically corresponded to 0.0005 gm. of the active crystalline body; the injected dose varied from 1 to 2 c.c., given intramuscularly or intravenously. With the exception of one case, the injection was in all instances well borne. In one instance a perivascular infiltration was noticed for several days much complained of by the patient on account of pain and swelling. As a rule the patients were kept at absolute rest in bed, with liquid diet in restricted amounts, keeping the patient as far as possible from exertion or nervous or other excitement. As in other publications on ouabain therapy, Zueblin's study deals with cases of valvular, endocardial, and myocardial insufficiency.

Among the immediate obvious changes to be expected after ouabain injection is the improvement of the blood pressure which before could hardly be obtained by the palpatory method and frequently for the systolic value only, once the remedy had been given we could ascertain with the auscultatory method the systolic as well as the diastolic threshold. Under favorable conditions a distinct rise in the diastolic pressure occurs within the first twenty-four hours, which rise ought to persist for several days over the initial figure. The change in the diastolic pressure is less conspicuous but apparently a reduction in that value may be looked on more favorably than a rise. Where a tachycardia becomes less, or approaches more normal figures, and where a bradycardia equally approaches the normal rate, this ought to be interpreted favorably. Considering the cardiac activity, cases with a high pulse rate and a low pulse pressure frequently are unfavorable as to the final outcome.

In instances of cardiac hypertrophy and dilatation a considerable reduction in the extent of the relative cardiac dulness can be anticipated, but such a reduction does not mean a constant result nor a definite promise for the effectiveness of the cardiac medication. With reference to the heart sounds reduplicated sounds may disappear and extrasystoles may equally vanish, while cardiac murmurs are not liable to change in character. The nature of the pathologic lesion, whether endocardial, associated with marked hypertrophy and tending toward dilatation, or due to an already degenerated myocardium, has a great bearing on the final results. The first mentioned instances appear favorable for the use of ouabain medication, particularly when haste is required to stimulate the contraction of the dilated and distended cardiac muscle previous to the effect of digitalis medication which requires a longer time to become manifest.

Missouri State Medical Association Journal, St. Louis

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60 Plea for Renaissance of Hodgen Splint. F. G. Nifong, Columbia. —p. 281.
61 Private and Affiliated Hospital Organization. L. Rassieur,—p. 285.
62 Kitchening of Food Supplies in Public Catering Places and Effect on General Health and Life. G. Homan, St. Louis.—p. 287.
63 Operative Treatment of Fractures. E. Fischel, St. Louis.—p. 291.
64 Surgical Aspect of Bronchiectasis. H. G. Mudd, St. Louis.—p. 295.

Neurological Bulletin, New York

July, 1918, **1**, No. 7

65 Spongioblastoma with Unusually Rapid Growth Following Decompression. I. Strauss and J. H. Globus, New York.—p. 273.
66 Case of Hemiplegia with Hemianesthesia, all Qualities of Sensation Involved. H. Howe, New York.—p. 282.
67 Tumor of Posterior Cranial Fossa. H. Howe, New York.—p. 285.
68 Case of Possible Anterior Poliomyelitis Revealed by Subsequent Occupation. O. S. Strong, New York.—p. 289.
69 Sacral Tabes or Cerebrospinal Syphilis. I. S. Wechsler, New York.—p. 292.
70 Case Showing Clinical Manifestations of Progressive Lenticular Degeneration. M. Osnato, New York.—p. 297.
71 Studies on Morphology of Gray Matter in Brain Stem of Vertebrates by Reconstruction Method. R. Hoyt, New York.—p. 302.

New Orleans Medical and Surgical Journal

August, 1918, **71**, No. 2

72 Dietetic Treatment of Liver Diseases. A. Eustis, New Orleans.—p. 59.
73 Radium Treatment of Fibroid of Uterus. E. C. Samuel.—p. 69.
74 Simple Surgical After-Treatment. E. L. Sanderson, Shreveport.—p. 74.
75 Function of Gallbladder; Experimental Study. F. C. Mann, Rochester, Minn.—p. 80.
76 Important Factors Relative to Tuberculosis in Army and Civil Practice. W. J. Durel, New Orleans.—p. 92.
77 Acute Nephritis in Childhood. S. G. Wilson, New Orleans.—p. 100.
78 Clinical Phases of Case of Dermal Myiasis. I. Dyer, New Orleans.—p. 105.
79 Case of Dermal Myiasis Caused by Lucilia Seratica. W. V. King, New Orleans.—p. 106.

New York Medical Journal

Aug. 31, 1918, **108**, No. 9

80 Pasteur's Relation to Medicine and Surgery. W. C. Borden, Washington, D. C.—p. 358.
81 Fracture Depression of Laminae of Fifth and Sixth Cervical Vertebrae. J. J. McGrath and J. Byrne, New York.—p. 363.
82 Rhythmical Breathing. I. H. Hance, Lakewood, N. J.—p. 366.
83 Some Phases of Medical Inspection in Public Schools. G. M. Retan, Syracuse.—p. 368.
84 Can Flat Foot Be Cured? J. M. Taylor, Philadelphia.—p. 373.
85 Systematic Development of Roentgen Ray Plates and Films. M. B. Hodgson, Rochester.—p. 374.
86 Thrombosis and Embolism. H. R. Coston, Birmingham, Ala.—p. 374.
87 Milk as Galactagogue. L. S. Palmer and C. H. Eckles, Columbia, Mo.—p. 375.

Philippine Journal of Science, Manila

July, 1918, **13**, Sec. B, No. 4

88 *Cryptoplasmic Infection. Development of Cryptococcus in Cultures from Unclassified Chronic Philippine Ulcer. H. W. Wade, Manila.—p. 165.
89 *Treatment of Yaws with Castellani's Mixture. L. E. Guerrero, E. Domingo and M. Argüelles, Manila.—p. 191.
90 Reconstruction of Two Sets of Duck Twins, with Special Reference to Early Embryonic Development of Vascular System. E. S. Ruth, Manila.—p. 201.

88. **Studies on Cryptoplasmic Infection.**—There has been found in one district of the Philippine Islands a type of lesion, invasive, and usually more prominently ulcerative, of undetermined etiology. On clinical grounds it seems very possibly mycotic. No parasite of any type, protozoal, bacterial, or fungous, can be demonstrated in the lesion. Fragmentation of the nuclei of polymorphonuclears into separate rounded masses ("chromolysis") is sometimes interestingly prominent. In certain cultures on special media, of tissues excised from the lesion, the nuclear bodies of leukocytes have undergone modification to produce clear-cut, intensely staining basic forms. From each of two cases, in one culture only, there has developed a cryptococcus of very low cultivability and of cultural requirements suggesting high parasiticity. This is thought not to be a contaminator but, in the absence of any recognizable precursor, possibly to be a development of the basic forms. This suggested evolution can be explained only on the basis of the hypothesis that the infecting organism may have assumed a cryptoplasmic state on adapting itself to animal parasitism, followed by the invasion and utilization of the tissue cells, particularly the polymorphonuclears.

89. **Treatment of Yaws with Castellani's Mixture.**—Castellani's formula consists of: 0.065 gm. of tartar emetic; 0.65 gm. sodium salicylate; 4 gm. potassium iodid; 1 gm. sodium bicarbonate, and 30 gm. water. This is given in one dose, diluted in 4 ounces of water, thrice daily, for adults and for children over 14 years of age; half doses to children 8 to 14 years of age; one-third doses or less to younger children, and not more than half doses to Europeans. The authors have used this treatment in more than forty-three cases. Of thirty-six cases that continued the treatment, twenty-four completely recovered, seven showed improvement of symptoms, seven showed no improvement at all, and five had relapses in from two to five months after the lesions had entirely healed. Guerrero and his associates are convinced that the treatment of Castellani undoubtedly exerts a curative influence on the various manifestations of frambesia. The relapses and incomplete recovery observed in some cases are ascribed to an incomplete medication, due to the suspension of treatment before the destruction of *Spirochaeta pertennis* was complete.

Public Health Journal, Toronto

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91 Plea and Plan. W. H. Hattie, Nova Scotia.—p. 349.
92 Venereal Disease Problem. G. Bates.—p. 354.
93 Public Health Service in Small Towns and Rural Municipalities. J. J. Harper.—p. 360.
94 Management of Child Welfare Week in Small Cities and Towns with Results. M. Power, Toronto.—p. 362.
95 Ethics of Commerce. G. S. Brett, Toronto.—p. 364.
96 When Should Financial Federations Be Started? W. C. White, Milwaukee, Wis.—p. 373.

Southern Medical Journal, Birmingham, Ala.

August, 1918, **11**, No. 8

97 Importance of Malaria from Public Health and Economic Standpoint. W. S. Leathers, University, Miss.—p. 541.
98 Modern Aspects of Malaria Problems in Peace and War. F. L. Hoffman, Newark, N. J.—p. 545.
99 Malaria Control in Environment of Cantonments. J. A. LePrince, Washington, D. C.—p. 551.
100 Some Results of Malaria Control by Control of Insect Host; Public Health and Economic Aspects. R. C. Derivaux, Washington, D. C.—p. 556.
101 Bearing of Malaria on Railroad Operation. H. W. Van Hovenberg, Tyler, Texas.—p. 562.
102 Geologic Surveys and Eradication of Malaria. T. W. Vaughan, Washington, D. C.—p. 569.
103 Malaria Campaign. W. C. Johnson, Memphis, Tenn.—p. 572.
104 Memphis' Malaria Problem. B. Smith, Memphis, Tenn.—p. 574.
105 What the Cotton Belt Railway Company Is Doing for Prevention of Malaria. H. H. Smiley, Texarkana, Ark.—p. 576.
106 Chronic Acidosis; Etiology, Prophylaxis and Treatment. G. C. Mizell, Atlanta, Ga.—p. 578.
107 Treatment of Tropical Abscess of Liver. J. S. Helms, Tampa, Fla.—p. 582.
108 Mixed Tumor of Lachrymal Gland. A. O. Pfingst, Louisville, Ky.—p. 587.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

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111 Surgical Pathology of Right Upper Abdominal Quadrant. F. H. Clark, El Reno.—p. 179.

Southwestern Medicine, El Paso

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112 Use of Obstetric Forceps. B. E. Galloway, El Paso.—p. 1.
113 Dakin's Solution and Chlorazene; Report of Cases. A. C. Carlson, Jerome, Ariz.—p. 5.
114 Diaphragmatic Pleurisy; Report of Case. E. B. Rogers, El Paso.—p. 12.

Tennessee State Medical Association Journal, Nashville

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115 Acute Osteomyelitis. E. M. Sanders, Nashville.—p. 133.
116 Report of Committee on Social Medicine. W. Krauss.—p. 141.
117 Institutional Care of Infants. R. H. Perry, Nashville.—p. 147.
118 Detection of Feigned Blindness and Deafness. H. Ezell, Nashville.—p. 150.
119 Kaiserism and Medical Profession. W. F. Clary, Memphis.—p. 152.

Texas State Journal of Medicine, Fort Worth

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120 Question Mark or Easy Mark. E. P. Lyon, Minneapolis.—p. 159.
121 Truth About Traumatic Hernia. B. Saunders, Fort Worth.—p. 164.
122 Modern Methods of Health Administration. W. A. King, San Antonio.—p. 167.
123 Original Investigations Regarding Cause of Hay-Fever and Its Proper Treatment. A. Woldert, Tyler.—p. 169.
124 Method of Repair for Corneal Injuries. J. H. Burleson, San Antonio.—p. 172.
125 Activities of Bureau of Rural Sanitation. P. W. Covington, Austin.—p. 173.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

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1 *Treatment of Wounded in Aid Posts and Field Ambulances. S. M. Smith.—p. 127.
2 *Gunshot Wounds of Head. T. O. Graham.—p. 129.
3 *Traumatic Aneurysm of Left Subclavian Artery. J. S. White. —p. 131.
4 *Blood Pressure in War Traumatisms. E. F. Cyriax.—p. 132.
5 The "Man Value" of Working Class Diets. Greenwood and C. M. Thompson.—p. 133.

1. **Treatment of Wounded in Forward Areas.**—The general principles which govern forward unit work are summarized by Smith as follows: 1. Get the wounded back to the clearing station as soon as you can. 2. Dress the wound once carefully; afterward do not disturb the dressings unless they have slipped or unless there is bleeding. 3. Take measures to avoid shock; if it has already supervened, take measures to treat it. 4. Efficiently splint all fractures. 5. Arrest hemorrhage. 6. Take any special measures needed in special cases. Rapid evacuation calls for qualities of organization, and endurance, devotion and courage. A wounded man passes through one of the larger units in much the way that a piece of metal passes from department to department of a factory till it emerges the finished article. Records have to be taken, antitetanic serum given, food or drink administered, the wound dressed, splints applied, the patient warmed and packed up for transport. Often this has to be done under circumstances of almost intolerable difficulty. The difficulties can only be surmounted by organization of the machine beforehand, so that each man does his job and confusion is avoided. "Team work" is essential. Smith says: "To see a Thomas' splint applied to a fractured femur by a well drilled team is a revealtion to the inexperienced."

Dressings must be ready beforehand. The field or shell dressing will have been applied usually by unskilled hands. It is liable to be dirty and tight. Therefore remove it and do one careful dressing. It is not possible to have clean hands. Rubber gloves are out of the question, but with sufficient practice forceps can do the whole work without hands having to touch either the wound or the dressings which are to be in immediate contact with it. Pairs of sterilized forceps standing in glasses of antiseptic should be at each dressing "dump." The wound itself is temporarily covered with gauze; the skin around is then washed and painted with picric acid (3 per cent.) in alcohol. (Iodin is liable to blister, and when combined with cyanid gauze causes serious burns.) The wound is then uncovered, obvious dirt or foreign bodies are removed, and the surface of the wound swabbed over with eusol. No attempt should be made to clean out the depths of the wound or to syringe or irrigate. Attempts to delay or avoid infection by the injection into wounds of fluids or pastes are futile. The wound is finally covered with gauze and wool and bandaged.

Shock is caused by cold and exposure, lack of food and drink, hemorrhage, pain and disturbance. The warm stretcher is used in many aid posts. Improvised hot-water bottles are widely employed, and ambulance cars are warmed by the exhaust pipe. When circumstances allow, and it is possible to do it in reasonable warmth, and shelter, the wet clothes may be changed. Hot drinks should be given. With a view to combating acidosis, a teaspoonful of bicarbonate of soda is sometimes added. Of all factors concerned in shock, hemorrhage is, perhaps, the most potent. Every effort must be made to reduce it to a minimum. Every change of dressing starts oozing afresh. In the avoidance of pain, the importance of efficient splinting cannot be overrated. Morphin is of great value. It should not, however, be given indisciminately, and the dose needs careful regulation. A dose of one-fourth grain should seldom be exceeded. Transport with fractures imperfectly splinted is a great feature in increasing and producing shock. Every fracture should be immobilized as far forward as possible. This is very often possible at the aid post. Failing this, it should be done at the advanced dressing station. The fewer and simpler the varieties of splints used the better.

As for hemorrhage, Smith says, that properly used, the tourniquet at times saves a life. Improperly used, it is a frequent cause of loss of life and limb. Its use is seldom justifiable, and then only as a temporary measure for the arrest of serious bleeding until the wounded man can be got to a place where the arrest of hemorrhage by the recognized surgical methods can be carried out. In patients getting back as far as the clearing station with tourniquets applied, death of the limb from interruption of the circulation is almost invariable. Even if this does not occur, the cutting off of the blood supply from an area of smashed muscle provides all the ideal conditions for the development of gas gangrene. Other measures than the tourniquet should therefore be adopted, and if for some reason a tourniquet has been applied it is the duty of every medical officer through whose hands the patient passes to remove it.

In most cases there will be no bleeding. If, however, bleeding recommences, then the following methods should be employed: 1. In many cases the obvious source is exposed in the wound and may be seized with pressure forceps and ligatured. This is the ideal. 2. In other cases blood may be seen welling from a deep recess of the wound. Pressure forceps are applied in that area and the bleeding ceases. It is best to leave the forceps on and pack round with gauze. The patient is sent on with the forceps in situ. 3. If neither of these methods is applicable pressure must be obtained by packing the wound. But it is essential that the pack really presses on the bleeding point. The pack must be cone shaped, with its apex at the source of hemorrhage. If the wound aperture be small it must be enlarged by slitting up the skin and fascia. No anesthetic should be used. The pain caused is not great, particularly if the incision be made in a distal direction where the nerve supply has been interrupted by the injury. Gauze is then packed firmly into the wound and a pad placed over it. Firm pressure is made with a bandage, but a wide wooden splint should always be applied to the opposite side of the limb before the bandage is applied, in order to avoid constriction of the extremity.

Cases of penetrating abdominal wounds should be sent by the shortest route to the clearing station. In penetrating chest wounds an injection of morphin should be given. This lessens the respiratory distress. The patient should be placed in the position of greatest comfort, which is usually the semi-recumbent posture. In dresing the wound, it is important to avoid the interference with the free play of the uninjured side of the chest caused by an encircling bandage. Use strapping when possible. There is one class of chest wound that needs special attention. The wound in the parietes may remain open so that air is sucked in and out with respiration, or the blood collected in the pleural cavity may be leaking away through the external aperture. "Sucking pneumothorax" and "leaking hemothorax" are convenient terms for these conditions. In the first the respiratory embarrassment is extreme, and the patient's condition desperate from the start. In the latter, so long as there is a free external leak, internal bleeding is likely to continue. In both infection is certain if the condition continues. In both types of case the wound should be closed before the patient is sent on. Great care must be taken to splint all cases in which joint injury is suspected. Failure to splint favors bleeding, effusion and distention.

2. **Gunshot Wounds of Head.**—Nearly 500 cases of gunshot wounds of the head have passed through Graham's hands. In about 50 per cent. of those cases in which the dura was opened by depressed or indriven fragments of bone, by the missile, or subsequently opened at operation, death ensued. In the cases in which trephining had to be resorted to, the mortality was less than 10 per cent. where the dura was intact, and just over 50 per cent. in those in which the dura was penetrated. Graham operates under local anesthesia in nearly all cases. He lays down the following fundamental principles: 1. Two stereoscopic roentgenograms are essential for accurate localization. 2. Careful neurologic examination will often elicit signs and symptoms which will guide in operative treatment. 3. All cases should be operated early,

before marked sepsis has intervened. 4. The dura should be treated with respect, and the risk of hernia cerebri and meningitis when the dura is opened always borne in mind. The dura should be incised only when urgent symptoms demand it, and not merely to avoid phantom symptoms which may never arise. Headache and a mild degree of optic neuritis, unless increasing in intensity, are not necessarily indications by themselves. 5. An attempt to remove foreign bodies should be made only in the case of those easily accessible, those which can be removed without producing greater damage to the brain than that already created by the entry of the missile.

3. **Traumatic Aneurysm of left Subclavian Artery.**—White cites a case in which he did a successful ligation at the junction of the first and second portions.

4. **Blood Pressure in War Traumatisms.**—Cyriax is convinced that there is a possible source of error in estimating the blood pressure in cases of war traumatisms, namely, that in a certain proportion of unilateral traumatisms the pressures in the two arms may show wide differences. Not only is this so, but the readings on one day may be higher in one arm than in the other, but the reverse a day or two later. When differences occur they generally diminish as improvement proceeds and disappear some time before complete recovery. Thirty-six cases were examined by Cyriax; in twenty-six no difference, or only a slight difference (2 to 4 mm.), was found; such differences were considered negligible. In six cases differences of 6 to 8 mm. were found, which sank to about half this amount about three days later, and disappeared at the end of the week.

Edinburgh Medical Journal

August, 1918, **21**, No. 2

6 Training of Student of Medicine: Essentials of Surgical Teaching. G. G. Turner.—p. 68.
7 Id.: Teaching of Clinical Surgery. F. M. Caird.—p. 77.
8 Id.: Systematic Surgery, That Is, That Outside Hospital and Away from Patients. A. Thomson.—p. 80.
9 Id.: Teaching of Surgery. A. Miles.—p. 83.
10 Id.: Diseases of Children; Suggestion for Preliminary Course in Clinical Medicine. J. S. Fowler.—p. 98.
11 Id.: Teaching of Surgical Diseases of Children. J. Fraser.—p. 104.
12 Id.: Dispensary Practice as Part of Medical Training. J. Orr.—p. 106.
13 Id.: Teaching of Vaccination. W. G. A. Robertson.—p. 111.

Journal of Tropical Medicine and Hygiene, London

Aug. 1, 1918, **21**, No. 15

14 Pellagra. A. Viswalingam.—p. 153.
15 Congenital Defect of Abdominal Wall. W. A. Young and E. J. Wright.—p. 158.

Lancet, London

Aug. 10, 1918, **2**, No. 4954

16 Celiac Disease. G. F. Still.—p. 163.
17 *Bacillary Dysentery. G. S. Buchanan.—p. 166.
18 *Instinct Distortion or War Neurosis. D. E. Core.—p. 168.
19 *Disappointments of Vaccine Therapy. H. G. Adamson.—p. 172.

17. **Bacillary Dysentery.**—An outbreak of bacillary dysentery studied by Buchanan presented the following features: (*a*) sudden onset and brief duration; (*b*) evidence that the infection was water-borne; (*c*) Shiga's bacillus as the infecting agent in all cases; (*d*) evidence of the persistence of Shiga's bacillus when experimentally introduced into water and food; (*e*) noteworthy results of agglutination tests when applied both to dysentery convalescents and to those who had presumably been exposed to infection but had escaped illness.

18. **Instinct Distortion or War Neurosis.**—The diagnosis of the instinct distortion, or war neurosis, Core says, is, as a rule, easy. In the absence of signs of organic disease it may be made in the case of any patient who shows symptoms of nerve irritability and in whom, at one time or another, the element of fear is present. In the event of such symptoms existing in a patient who shows no signs of fear, either in his waking hours or in his dreams, one of two conditions may be present—the war neurosis in the late or habit stage, in which there will be a history of terror dreams at the beginning of the illness; or a suggestion hysteria, in which case no such history is obtainable. Leading questions should not be asked; the patient should merely be asked if he sleeps well, or if he slept well at the time of onset of the breakdown. It sometimes happens, though not in Core's experience very commonly, that an instinct-distortion neurosis and a pure hysteria exist in the same patient.

The treatment of the instinct-distortion neurosis is, in its essence, simpler than that of the hysterias, and more satisfactory. Two fundamentally important principles in treatment should always be kept in mind. The first is that the patient must be removed as quickly as possible from the environment which was responsible for the condition—he ought to be taken right away from any focus of fighting; and the second is that from the very beginning he ought to have it impressed on him that he is going to get completely cured. The removal from the combatant atmosphere is so obvious and so usual that its importance as a method of treatment as well as the light it throws on the origin of the condition is in danger of being overlooked. When such a patient has arrived at the ultimate base wherein the remainder of his treatment is to be effected, if he is still in the active stage he should be kept for the most part in bed and in a ward that is quiet. It is inadvisable that he should be alone. Here he should stay until he is able to sleep without being waked up frequently by his dreams. In the early stages, when he is unable to sleep at all, Core has found the best results with 10 grains of sulphonethylmethane, with or without acetylsalicylic acid, and diminished gradually as the tendency to sleep improves.

During this period it is well to make him realize that he has power over his legs by making him take a few steps every day in the ward, but as long as he is definitely "ill" with his condition he ought to spend most of his time in bed. He should be seen frequently by the medical officer in charge and should be constantly reassured as to his complete curability and encouraged to look on himself as improving from day to day. As the sleep improves and the dreams lessen in intensity he should be made to leave the ward for a short time each day and mix with the other patients, and then the more detailed treatment may be instituted.

These patients manifest one, some, or all of the following disabilities: speech defects, tremors, disorders of gait, mental depression, irritability of the sympathetic nervous system. As regards speech defects and disorders of gait the principle treatment is "careful and painstaking reeducation." Tremors also should be treated with exercises of precision. Mental depression calls for special treatment only when it does not yield to the general treatment. The tachycardia and other signs of irritability of the sympathetic nervous system are best treated by graduated exercises.

19. **Disappointments of Vaccine Therapy.**—The tendency to employ vaccines indiscriminately in all sorts of complaints is deprecated by Adamson because we are not in a position to know when we may do good and when we may do harm by this treatment, since we have no means of estimating its effects in a person whose reactivity has been altered, perhaps profoundly altered, as the result of previous microbic infection. The almost equally prevalent use of vaccines in diseases of nonmicrobic origin is perhaps of less consequence, but it is apt to delay the employment of a treatment more suited to the case and more efficient.

Sei-I-Kwai Medical Journal, Tokyo

July, 1918, **37**, No. 7

20 Relation of Heat Hemolysis and Blood Serum. Y. Kuno.—p. 25.
21 Experimental Study of Heat Stroke. C. Koidzumi.—p. 26.
22 Hyperemesis Gravidarum. N. Kuji.—p. 27.

Archives Médicales Belges, Paris

March, 1918, **71**, No. 3

23 *Wounds of Joints. C. Willems.—p. 225.
24 *Traumatic Effusion in the Knee. J. de Caestecker.—p. 247.
25 *Researches on Syphilis. J. E. R. MacDonnagh.—p. 263.
26 *Tear Sign of Death. A. Lecha-Marzo.—p. 271.
27 Roentgenoscopy in Internal Pathology. M. van de Waele.—p. 279.

23. **Immediate Active Mobilization of Joints After War Wounds, etc.**—Willems' views in regard to the necessity for exercising an injured joint from the very first were summarized in the Paris Letter, p. 842. He evacuates the effusion or pus in the joint at once, and the cure was so complete in some of his knee cases, reexamined several months

later, that the men were unable to recall which knee had been punctured. Even with fracture of the patella, he ties silkworm gut around it and sets the patient to using his knee in five or six days. At first the patient bends his knee very little as he walks, but in less than a month the gait may be entirely normal although the knee may be still swollen a little. In Belgium, France and Germany this method of immediate active mobilization found many adherents for industrial accident cases, and hundreds of cases with constant success were reported and no mishaps. Then came the war, and Willems found that this method could be applied to war wounds, even those with intra-articular fractures and purulent arthritis. Of course immediate walking is out of the question with a destructive war wound of the knee, but active mobilization is possible and imperative.

He rejects passive exercise of the joint as doing more harm than good. When you tell the patient to move his joint as soon as he comes out from under the anesthetic, he declares he cannot do it. He has to be persuaded that he is mistaken and that he can move the joint. He must then be urged to push the muscular movement to the maximum, constantly increasing the effort until the play of the joint approximates normal. It is essential for success that the joint must never be left absolutely still. Fear of fatigue should not deter, as fatigue does no harm. The man does not keep up the effort unless he is reminded and urged frequently to it, under constant surveillance of a personnel skilled in the method, able to teach the men how to exercise the special muscles involved without waste of energy. The movements are always a little more difficult in the morning; the joint seems stiffer. Sometimes sudden pain develops and the man is unable to move the joint. Examination reveals some effusion, and when this is evacuated, the pain and impotence disappear with it. Willems insists that, whatever the extent of the lesion, mobilization is always possible, although of course the extent of the movements possible varies with the character of the injury.

The immediate exercising of the joint is not painful in the true sense of the word unless it displaces large fragments of bone; then active mobilization of the joint should be postponed until this is corrected. Immediate active mobilization is not painful but it is laborious. The limb feels heavy, and the patient has to make an effort to move it. Actual pain is quite exceptional, and then is transient. The patient, however, may pretend that the movements are painful, in order to escape the exertion. On the other hand, many of the wounded affirm that if the joint grows painful during repose, the best means to banish the pain is by starting to exercise the joint. It is in purulent arthritis that early active mobilization gives the most surprising results. At each bending and straightening of the joint the pus is expelled, and thus there can be no retention of secretions, and the joint is thus effectually drained.

24. **Traumatic Effusion in the Knee.**—Caestecker describes the application in forty-two cases of Willems' method of puncture, followed by immediate walking, using the knee. The puncture is made under stovain local anesthesia, as he describes in detail, the knee prepared as for a major operation. The operator stands on the patient's right side, whichever knee is to be operated on. With his left hand he pushes the fluid forward until it lifts the patella and the lateral culdesacs protrude. With the right hand, the bistoury is introduced close to the edge of the patella, about half way up. As the bistoury enters the cavity, it is moved for a quarter of a circle, to make the incision gape. Then the operator manipulates the joint to force all the fluid out through the puncture hole, held open by the bistoury. Then the bistoury is straightened and withdrawn; a small loose dressing is applied, and the patient begins to walk as soon as he gets off the table. At first he is afraid to use his knee, but as soon as he can be persuaded to take a few steps, he finds that it does not hurt him and he is turned loose with the advice to keep on walking, almost without stopping, even to the point of fatigue. With simple hemarthrosis, the blood does not clot for several days. Whenever clots are found, this indicates some lesion in bone or cartilage. The twenty-five hemarthrosis cases are described in detail. The cure is very rapid, all objective findings returning to normal in three or four days, and the last trace of the subjective disturbances vanishing by the end of the first or second week. No tendency to atrophy of any muscles was observed in any instance. The effusion returned in 23.5 per cent. of the seventeen hydrarthrosis cases and in 40 per cent. of the others, but they yielded to a second puncture. He insists that there is no exception to the rule that every case of effusion in the knee should be punctured and the knee used at once.

25. **Research on Syphilis.**—McDonagh's article appears to be practically a translation of one published in the *Journal of Cutaneous Diseases*, 1917, **35**, 222.

26. **Diagnosis of Actual Death.**—Lecha-Marzo reviews the various means for distinguishing between real and apparent death, and reports constantly reliable findings with his own test, the tear test. Tears have an alkaline reaction in the living. The reaction was invariably alkaline in 542 men and 537 women, as also in 1,104 hospital inmates, including fifty-six with blepharitis, thirty-six with lacrimal fistulas, and forty-nine with iritis. After death, the reaction veers to acid; the secretions of the eye never give an acid reaction during life. The simplest way to apply the test is to insert a piece of litmus paper between the eyelids, placing it on the eyeball and pressing the eyelids lightly down on it. In the living subject a blue spot appears on the paper; in the cadaver there is no change of tint, or the pink tint becomes still pinker.

Bulletin de l'Académie de Médecine, Paris

July 16, 1918, **80**, No. 28

28 *Normal Parasitism and Microbiosis in Muscles. V. Galippe. —p. 43.
29 *Migration of Projectiles in Blood Stream. C. Achard and L. Binet.—p. 72.
30 *Medical Victims of Hypochondriac Murderers. Dupré.—p. 78.
31 *Cancer and War. E. Forgue.—p. 84; L. Bérard.—p. 103.
32 *Prophylaxis of Pulmonary Tuberculosis. Vidal.—p. 91.
33 *Treatment of Congenital Dislocation of Hip Joint. F. Calot. —p. 107.

28. **Normal Parasitism of Muscles.**—Galippe refers to his previous communications on the presence of living elements in the normal muscle tissue. Time and experience, he says, have confirmed his assertions that a healthy muscle is not aseptic; it would be impossible for the muscle to function without this normal parasitism and microbiosis. There could be no autolysis of muscle tissue without them. In a war wound, the devitalized muscle tissue may transform the normal into a virulent parasitism, as surgeons all recognize now. Hence surgeons strive not only to clear out as rapidly as possible all the devitalized tissues, but also to refrain from manipulation of the sound tissue left. Galippe discusses the subject of normal parasitism and microbiosis mainly in regard to cold storage of meats.

29. **Migration of Projectiles in Blood Stream.**—Achard and Binet conclude from their clinical and experimental experience that the force of the stream in the arteries—but not in the veins—is enough to move some projectiles along. Before an operation, the projectile should be located anew and the part placed so that gravity will not aid in the change of position of the projectile.

30. **Medical Victims of Hypochondriac Murderers.**—Dupré describes a special type of insanity in regard to which physicians should be on their guard, as these insane are homicidal and they select their victims among medical men. The recent assassination of Professor Pozzi was of this type. Their hypochondriac theme is almost invariably the genital or perigenital region, some impairment of function for which they seek medical aid and insist on an operation. The physician operates on a hydrocele, a varicocele, a chronic epididymitis or anal fistula or urethral stenosis. After the operation, the pains, impotence, disturbances in local sesibility and the *idée fixe* persist the same as before. The man besieges the physician with letters, calls and more and more pressing claims to the effect that he had aggravated the impotence and the pain, and had ruined the man's health and reason for living. The man insists on his claim to the cure which the operator in all good faith had assured him. The next step from this hypochondriac revindication is that the man

becomes a "persecuted persecutor." The physician thus hounded by the man finally shuts his door to him, paying slight heed to the mental trouble which he regards as of no consequence, thus failing to recognize the most dangerous of the mentally unbalanced. The physician's death sentence has been pronounced, as any alienist knows who has studied the evolution of this psychosis to its tragic outcome. In course of time, usually several years later, the hypochondriac, despairing of recovery and repulsed as a nuisance by the one he considers responsible for his physical deterioration, decides to take justice into his own hands. Providing himself with a knife or a revolver he proceeds to a final interview, and unhesitatingly and coolly kills his victim.

The list of martyrs thus murdered by these homicidal hypochondriacs contains names of obscure and of world known physicians. Dupré says, "I regret to confess that this is passed over in silence in most of the modern manuals of psychiatry. Several of them give no reference at all—a grave omission—to this psychosis and the laws of its homicidal reactions."

Dupré enumerates a number of such cases, mentioning the names of Drs. Gray, Oronge, Recoulet, Bleynie, Leclerc, and the quite recent cases at Paris of Guinard and Pozzi. Pozzi's assassin committed suicide at the same time, and necropsy showed the scar of Pozzi's operation on the scrotum, probably for varicocele. Dupré adds that the only case of this hypochondriac "persecuted persecutor" type of delirium in a woman was encountered recently, the patient being on the point of shooting Drs. Massary and Mauclaire in turn when her pistol was taken from her. He emphasizes that mental diseases run a regular course according to laws as fixed as those governing the best classified internal and superficial diseases, adding, "Psychiatry recognizes well established laws in diagnosis and prognosis, and although they do not always suffice to insure the cure of the mental disease, yet they permit classification and prognosis, and enable us to foresee the patient's acts."

31. **Cancer and War.**—Forgue's tabulated details show that a connection between active service and the development of a cancer has been admitted in 297 cases. In nineteen cases a war wound was accepted as having been the predisposing factor; in all the others, the circumstances of the service were regarded as having conditioned the development or the aggravation of the cancer. In only 486 cases to date is cancer supposed to have developed among the soldiers, and the data were incomplete in all but 297 cases. Almost 50 per cent. of these cases were in men between 40 and 45. Bérard relates that in seventy-one cases of cancer in men on active service, seven of the men had a history of trauma affecting the region where the cancer developed.

32. **Prophylaxis of Tuberculosis.**—Vidal suggests among other measures that every moving picture show on Sundays and holidays should be compelled to run some educational film in this line.

33. **Congenital Dislocation of Hip Joint.**—Calot presents evidence to show the perfect results obtained in treatment of congenital dislocation when the principles he advocates are scrupulously applied. (They were described in THE JOURNAL, Aug. 17, 1918, p. 605.)

Bulletins de la Société Médicale des Hôpitaux de Paris

May 3, 1918, **42**, No. 15

34 *Pyloric Incontinence. P. Carnot and H. Mauban.—p. 407.
35 *Alkaptonuria. A. Lahille.—p. 418.
36 *Mitral Stenosis of Tuberculous Origin. Barbier.—p. 422.
37 *Lethargic Encephalitis. P. Sainton.—p. 424.
38 *Venesection after War Wounds of Chest. G. Blechmann.—p. 427.
39 *Serotherapy in Acute Poliomyelitis. A. Netter.—p. 431; G. Etienne.—p. 432.

34. **Incontinence of the Pylorus.**—There may be insufficiency of the pylorus of organic or functional nature, with resulting disturbances as the food is passed along too soon for adequate digestion in the stomach. The organic cases can be differentiated by the lack of any modification when the subject drinks something hot, or acid, or ice cold. This causes the pylorus to contract if it is capable of contracting. Incontinence of the pylorus is probably a factor in certain forms of diarrhea.

35. **Alkaptonuria**—Lahille reports a case of alkaptonuria in a soldier, accompanied by pain in the lumbar region, and modified by sleep and repose. There was no alkaptonemia.

36. **Mitral Stenosis of Tuberculous Origin.**—The mitral stenosis developed under Barbier's eyes, the girl of 13 being under treatment for pulmonary tuberculosis. Necropsy showed it to be of a specially fibrous type.

37. **Lethargic Encephalitis.**—Sainton reports a typical case in a man of 51, previously robust. Headache, a chill and somnolency, with subdelirium, developed suddenly, with tremor and death the tenth day with bulbar phenomena, but no symptoms on the part of the ocular muscles, and none pathognomonic of meningitis. From the very first, the man held his head on one side, and Hontang noticed this deviation of the head in a case in a man of 68, likewise fatal.

38. **Asphyxia and Hypertension After Wounds of Chest.**—Blechmann calls attention to the extremely high blood pressure and tendency to asphyxia frequently noted after war wounds of the chest, and to the life-saving influence of venesection. He cites five typical cases to illustrate the great relief that follows withdrawal even of 125 gm. of blood.

39. **Serotherapy in Acute Myelitis.**—Netter relates that he now has a record of sixty-two cases of acute poliomyelitis given serotherapy with serum from convalescents. In a case reported by Etienne, the injection of serum was not made until the seventh day and only one injection was made, recovery following on it at once. The great difficulty, Netter remarks, is in obtaining the serum from persons who have already had the disease; it is hard to persuade them to give up their serum. He mentions that Neustaedt and Bantzhaf have succeeded in obtaining an effectual antiserum from horses injected with the products of autolysis of the nerve centers from men and monkeys that had succumbed to poliomyelitis. In Etienne's case the serum used came from a girl whose paralysis from the disease dated from about thirteen months before. Only 5 c.c. had been injected, and about 25 c.c. of limpid spinal fluid had been released, under high pressure, just before. The man had had a temperature of 41.2 C. at first but it had dropped to normal two days before the injection, and the paralysis, total at first, had shown slight indications of subsiding.

Paris Médical

June 22, 1918, **8**, No. 25

40 *War Psychoneuroses. M. Villaret.—p. 481.
41 Skin Grafts for Extensive Wounds. L. Moreau.—p. 488.
42 *Malformation of Jaws. P. Robin.—p. 492.

June 29, 1918, **8**, No. 26

43 *Auscultation in Sphygmomanometry. L. Tixier.—p. 497.
44 *Plastic Operations on Skull. L. Dufourmentel.—p. 503.
45 Scurvy and Dysentery. G. Schreiber.—p. 508.

40. **Treatment of War Psychoneuroses.**—Villaret has succeeded in having his ideas carried out in respect to the segregation in a special neurologic center of the men with war psychoneuroses, so that they can be given the isolation and special reeducation they require. Before this was realized, the men discharged as cured by one hospital would apply to others in turn, their psychoneuroses growing more and more inveterate until they obtained proper treatment. This has to be a combination of physical, psychic, pedagogic and other methods—all under strict medical surveillance. He seeks out the cases in the different hospitals in the region, visiting each every two weeks. The men are not allowed to leave the institution except as they are given brief good-conduct leave. The men who are improving are made monitors over the others, and are given leave of absence more often. The life in the hospital is carried on with military precision, by bugle calls. No crutches or canes are allowed, but two tall Alpine stocks are given those who feel they must have support. As they are so inconvenient, the men soon discard them.

The men are kept systematically busy all the time; a third of the day may be given up to different forms of treatment, another third to reeducation, and one third is always given to agricultural or vocational training and sports or military

exercises. Special emphasis is laid on training the will power. The outcome has been the recovery or great improvement of two thirds of the men, but there are about fifty whose painful functional disturbances have lasted for over a year, rebellious to all measures. These *persévérateurs* should be sent back close to the front, he thinks, and be subjected to further study. A year ago the 450 beds were always filled, but now from 200 to 250 are empty. A year ago from 40 to 50 per cent. of the men with nervous disturbances presented psychoneuroses, but in his latest tour of inspection he found only three cases among the 298 men examined in the various hospitals of the district.

42. **Malformations of Jaws and Teeth.**—Robin has found in many cases that some malformation of the jaw or teeth or cheek in children was responsible for inadequate mastication or inadequate intake of air. His illustrations and clinical histories confirm the importance of correction as the first step in causal treatment of disease in stomach, bowel or chest.

43. **Auscultation in Sphygmomanometry.**—Tixier here concludes a series of articles on the advantages of systematic auscultation as a simple and practical method of measuring the blood pressure. He is confident that it will "soon become indispensable to practitioners as they learn to appreciate how immense are its results for diagnosis, prognosis and treatment of their patients." Charts are given showing the comparative findings with the different methods in vogue for estimating the blood pressure, and normal standards are cited.

44. **Plastic Operations on the Skull.**—When a flap of cartilage is used, and it is fitted in over the brain, under the edges of the bone, then any blow on this cartilage flap is transmitted directly to the brain. On the other hand, a metal plate on the bone, next the scalp, leaves a dead space below which fills up with tough scar tissue. Dufourmentel describes with illustrations a technic which avoids these disadvantages. A wax cast is taken of the gap in the bone and a plaster cast made from this. Over this, a light metal plate is made to fit as an inlay in the defect itself and over the edge of the bone all around. It adapts itself to every irregularity, and thus it is held firm in place even before the scalp is sutured over it.

Presse Médicale, Paris

July 18, 1918, **26,** No. 40

46 Extraction of Projectiles under Screen Control. P. Mauclaire.—p. 366.
47 *Induced Anti-Anaphylaxis. J. Danysz.—p. 367.

47. **Antianaphylaxis in Treatment of Asthma, Certain Skin Diseases and Gastro-Intestinal Mischief.**—Danysz reiterates that recent research has confirmed that certain symptoms in diseases are the result of the anaphylaxis induced by microbes, living or dead, or by some foreign albumin, incompletely digested, which have found their way into the blood and tissues. The resulting anaphylactic sensitization has to be overcome, and the means for this do not have to be specific. He remarks that all the methods employed to date in the line of vaccine or bacteriotherapy, serotherapy and chemotherapy owe what success they have attained to their efficacy in combating this anaphylactic sensitization. This feature common to them all has not been fully recognized hitherto. Vaccine therapy, serotherapy, etc., have been developed individually, without appreciation of this common basis on which all are founded, namely, the combating of the anaphylactic hypersusceptibility. All induce reactions of the same nature, and the therapeutic methods derived from them can and should be grouped under the one heading; namely, antianaphylactic treatments or methods.

In experimental anaphylaxis in the guinea-pig, there has to be, he says, the antigen, that is, some substance introduced into the blood and the tissues of the organism in a colloidal state. The period of incubation is the time it takes for the production in excessive proportions of the antibody which normally is in a strictly useful amount. Under the influence of the antigen, it is produced in abnormally excessive amounts. The "*déchainant,*" the unchainer or the exploder, is the substance which provokes the anaphylactic shock or crisis when it comes in contact with this excess of antibodies. This hypersensitization always responds with a reaction to the antigen which induced it, but this reaction may occur with other antigens or other sensory or psychic stimuli. For example, an attack of asthma, tachycardia or diarrhea may occur in consequence of the impression produced by cold, or by an odor, or even by an emotion. In the majority of cases, the digestive apparatus is the focus of the production of antigens—of microbic or alimentary origin. Some accidental or permanent congestion in the mucosa allows the antigen to pass into the blood and tissues. Hence we must seek in the intestinal flora for the antianaphylactic treatment of gastro-intestinal, pulmonary or cutaneous disturbances.

A preparation of microbes isolated from the intestinal flora, sterilized by heating, was injected subcutaneously in a man of 47 with asthma and dyspnea every night and morning until 10 a. m. The first injection relieved him, and after the series of ten he was apparently cured of the asthma which had tormented him for five years. A skin disease of fourteen years' standing subsided in the same way in another man under two series of ten injections. Fully 75 per cent. of the effects of this treatment was realized in the first twenty-four hours.

The same mechanism is responsible for paroxysmal hemoglobinuria, Danysz says, and explains the cure under repeated injections of autoserum, acting as an antiunchainer. In applying this principle of antianaphylaxis in treatment of chronic gastro-intestinal derangement, etc., all that is necessary, he reiterates, is to cultivate on ordinary gelose, in isolated colonies, all the aerobic microbes which develop under these conditions, mix them in proportions approximating those in which they occur in the feces, sterilize this emulsion by heating, and administer it to the patient by subcutaneous injection or by the mouth.

Correspondenz-Blatt für Schweizer Aerzte, Basel

July 20, 1918, **48,** No. 29

48 *Typhus. T. Hitzig.—p. 961.
49 Lipomas in Large Intestine. P. F. Nigst.—p. 966.
50 Orthopedic Apparatus (Zur Frage der Schienenhülsen-Apparate.) H. v. Salis.—p. 970; H. Hössly.—p. 973.

48. **Typhus.**—Hitzig describes his clinical experience with typhus in the city of Mexico. He adds that when one is bitten by a probably infected louse, it may be possible to ward off typhus by an immediate injection of a solution of phenol at the spot bitten, followed by a course of quinin, about 0.5 gm. daily, hoping thus to check the growth and proliferation of the microbes in the blood. Arsphenamin has also been recommended for the purpose, but the decision as to the efficacy of such measures is possible only when they fail. In any event, it is well to refrain from alcohol and nicotin, and keep the bowels open. In treatment he has never witnessed any influence from drugs on the course of the disease, but it is extremely important to supply an adequate amount of fluid. Typhus patients are seldom able to swallow, and the fluid may have to be given by the drop method in the rectum. He also made it a rule to give digitalis regularly after the first week in the severer cases, to sustain the heart during the last three or four days of the disease, which are exceptionally dangerous. With severe brain symptoms, lumbar puncture may prove an actual life-saving measure. Hypostatic pneumonia is warded off by frequently changing the patient's position. Two trained nurses, one for the night, must keep close watch over the patient during the critical days, for any sudden collapse or arrest of the respiration, or attempt at flight in the delirium.

Gazzetta degli Ospedali e delle Cliniche, Milan

June 6, 1918, **39,** No. 45

51 *Rapid Cytologic Diagnosis of Malaria. G. Cremonese.—p. 447.

June 9, 1918, **39,** No. 46

52 *The Official Decree on Tuberculosis in the Army. Ministero dell 'Interno.—p. 453.
53 Calcium Chlorid in Treatment of Tuberculosis. C. Rubino.—p. 456.
54 Wounds of Limbs without Bone Lesions. A. Venturi.—p. 461.

June 13, 1918, **39,** No. 47

55 *Wounds of the Spine and Cord. O. Ortali.—p. 465.

51. **Rapid Diagnosis of Malaria.**—Cremonese dries 2 or 3 drops of blood on a slide, leaving it for not less than two

hours. A drop of distilled water is allowed to fall on the slide, and the hemoglobin becomes dissolved in a few minutes. The fluid is then poured off and the specimen is rinsed under a very gentle stream of running water, holding the slide so that the water does not fall directly on the blood specimen. This washes out all the hemoglobin in two or three minutes at most. What is left on the slide is dried in the air and stained with the Giemsa. It is then easy to see whether the specimen is positive or negative for malaria, but the special type of the parasites cannot be distinguished. For this a smear has to be made, and he usually prepares two slides at the same time, one with the drop and the other with the smear method.

52. **Tuberculosis in the Italian Army.**—The substance of this official decree has already been given in these columns, in abstracts on pages 154 and 232. The practical effect amounts to compulsory notification of every case of tuberculosis in men of all ages throughout the entire country, as all were mobilized and the result of their physical examination recorded. The decree states in addition: "Each province is to have its antituberculosis committee which will be called on for a complex and continuous action of initiative, vigilance, propaganda and welfare work. And therefore it is necessary to call on for this service those who from a sense of duty, official responsibility, philanthropic spirit and convictions as to the possibilities for good in the work, can usefully aid in the service with intelligence and sympathy." The committee thus will include ex officio the government and provincial officials, the professors of hygiene in the nearest university, the public health officials, a representative of the medical corps of the army (and navy, in seacoast provinces), a delegate from the Italian Red Cross and one from the provincial board for rehabilitation of disabled soldiers. These members of the committee are to be appointed by the chiefs of the state departments to which they belong, and five additional members are to be appointed by the prefect of the province. It is expected that the committee will appoint subcommittees to take charge of different branches of the work, housing, propaganda, etc. A report of the work of the committee in each province is to be presented quarterly to the minister of the interior department. The committee is to meet at the headquarters of the prefect and at his call. Provisions are made for the committee to receive donations and legacies, etc.

55. **War Wounds of Spine.**—Ortali describes the symptoms from a war wound of the spinal cord at different levels, and the indications for operative intervention. He advocates an operation when the projectile is still in the spinal cavity, even when the symptoms testify to complete severing of the cord because it is impossible to tell whether these symptoms may not be merely the result of pressure. An operation is also called for with fracture of the posterior arch of a vertebra, with sinking in of the fragments, as they are liable to compress the cord. Operative intervention is promising also when motor and sensory functioning are not entirely abolished. A few typical cases are described, one of complete recovery after removal of a splinter of bone from the fractured vertebra which had been pressing on the cord. In another case some motor function was regained after suture of the half severed spinal cord.

Annaes Paulistas de Medicina e Cirurgia, S. Paulo

March, 1918, **9**, No. 3

56 Urinary Stones in Children. R. Puech and G. P. Souza.—p. 49. To be continued.
57 *Fatal Typhoid Meningitis. U. Cintra.—p. 64.

57. **Fatal Typhoid Meningitis.**—Cintra's patient was a man of 33 and the typhoid bacilli were in pure culture in the spinal fluid.

Gaceta Medica de Caracas

May 31, 1918, **25**, No. 10

58 Principles of Medical Ethics. L. Razetti.—p. 101.
59 *Code of Medical Ethics. Academia Nacional de Medicina.—p. 105.

June 15, 1918, **25**, No. 11

60 First Operative Case of Spina Bifida in Venezuela. D. A. Calatrava.—p. 113.
61 Intestinal Parasites in Venezuela. E. P. de Bellard.—p. 115.

59. **Code of Ethics Adopted by the Profession in Venezuela.**—The state of Venezuela in founding the National Academy of Medicine in 1902, specified that it should draw up a code of ethics for the medical and allied professions. Various attempts at this have been made but nothing satisfactory was produced until recently, when the Academy formally adopted the *Codigo de Moral Medico*. There are twelve chapters and an appendix, the latter entitled "Precepts recommended for the guidance of the public in their relations with the profession."

The code on the whole follows the "Principles of Medical Ethics" of the A. M. A. but goes beyond it in several points. An honor court is provided, the Consejo de Disciplina Profesional, which can impose the penalty of exclusion from medical meetings (*las juntas medicas*) for a period not exceeding four months for the first infraction. The council is to be composed of five members, elected by the academy for a two year term by secret ballot, three to be members of the academy and the two others qualified physicians residing in Caracas but not belonging to the academy. The decisions of the council after approval by the academy are to be communicated to all the physicians in the town where the accused resides, to all the members of the academy, and to all the medical faculties in the country.

The provision that a physician is free to choose whom he will serve is limited by the obligation to attend another physician who has need of his services, or when there is no other qualified physician in the locality where he lives. In the section on advertising, it is stated that it is unprofessional to announce or publish in any maner that a physician is giving his services or medicines free to the poor; to invite lay persons to witness operations; to establish an office or consulting room in the same building in which there is a drug store; recommend publicly or privately any special pharmacy, and to treat gratuitously wealthy persons, without justified cause, in order not to injure the interests of other members of the profession. Section 15 states, "It is the duty of physicians to combat *el industrialismo y el charlatanismo medicos* in whatever form they may appear, and to oppose by every legal method the preparation, the sale, the propagation and the use of secret medicines as well as the absurd and gross practices with which charlatans and impostors exploit the public. The same conduct should be observed in respect to the illegal practice of medicine, and the methods or systems which do not rest on any scientific base or are in open opposition to facts demonstrated by observation and experience."

A chapter with thirteen sections is devoted to medical secrecy. It states that it is the duty of physicians, surgeons, pharmacists, dentists and midwives as well as interns and male and female nurses, to preserve as a secret whatever they may see, hear or discover in the practice of their profession or outside of their direct ministrations and which should not be divulged. It defines that telling even one isolated person destroys the secrecy. The exceptions are when a physician is serving as examiner for an insurance company, or as expert appointed by the court in civil and criminal cases or when he is serving as health or town officer, or makes out death certificates and declares contagious diseases. As insurance examiner, the obligation to secrecy is binding if the person to be examined has recently consulted him privately. Section 73 declares that the physician must regard the most absolute secrecy when he establishes the presence of venereal disease in a married woman. He must not only refrain from acquainting her of the nature of her malady, but he must guard against any suggestion that her husband might have been the source of her contagion. In consequence he should never deliver any certificate nor make any deposition in such a case, not even when the husband gives his consent thereto. Section 75 specifies that when a physician knows that a healthy woman is nursing a syphilitic infant, he must appeal to the parents of the child to inform the nurse. If they refuse, he should inform the nurse that she is exposed to contagious disease, but without naming it, making arrangements that she should give up the child at once, but stay in the house long enough to determine whether she has been already infected. If the parents object to this and insist on the woman's continuing to nurse the child, he

will inform the nurse of the risk she is running of contracting a contagious disease. Two other sections specify that the physician can without conflicting with his professional obligations denounce crimes of which he may learn in the practice of his profession, and reveal the secret when it is a question of preventing a judicial error.

Other sections state: "The physician's office is neutral ground where he may receive and treat all the sick, whoever may be their attending physicians and whatever the circumstances that may have preceded the office consultation. . . . A married woman should never be examined except in the presence of her husband or some member of her family authorized by him. . . . Except in emergencies, general anesthesia should not be administered unless there are at least two qualified physicians present. . . . The obstetrician must obtain the authorization from the woman before doing therapeutic premature delivery or abortion or embryotomy on the living fetus."

The "precepts for the public in their relations with physicians" state: "The benefits which the public derives from medical charity, incessantly practiced, are so numerous and so diverse that the profession, considered as a whole, has a legitimate right to the consideration and the respect of the community. The community should appreciate at their true value the titles, the merits and the labors of the physician; should discriminate between true science and the pretensions of ignorance, between honorable professionals and the *industriales de la medicina.*" "The public should favor and stimulate by every means the study of the medical sciences. Every sick person should select for his attending physician one who has received a regular and complete scientific medical education, as it is impossible to suppose that in medicine—a science difficult and complicated beyond all others—knowledge is intuitive or can be acquired with greater ease than other sciences."

"The attending physician once selected, should not be changed, as this physician's continued experience with the constitution, the habits, the hereditary predispositions and the idiosyncrasies of his patient renders him better able to conduct treatment with intelligence and success. The patient should avoid the visits, even the social and friendly visits, of every physician except his attending physician, and if he cannot avoid them, he should not refer to his sickness or the treatment and regimen which have been prescribed for him." "The patient or the family wishing to change physicians, must first pay the charges of the hitherto attending physician and courteously inform him of the reasons for the change." The last sections warn the patient to be always ready to receive the physician when he comes, to save wasting his time, and not to insist unnecessarily on his coming at hours that interfere with meals and rest. "After recovery, the patient should not forget the obligations of a moral nature which he has contracted with the physician, for the services of a physician are of such a nature that mere pecuniary remuneration does not discharge the obligation."

Medicina Ibera, Madrid

May 25, 1918, **3**, No. 29

62 *Present Status of Ocular Tuberculosis. Basterra.—p. 213.
63 Fracture of the Patella. J. Blanc.—p. 216.
64 The Tonsils. Prada.—p. 218.
65 Cysts on the Face. Sicilia.—p. 220.

June 1, 1918, **3**, No. 30

66 History of Medicine in Spain. E. G. del Real.—p. 241.
67 Perforating Gastric Ulcer. J. Blanc.—p. 244.
68 Psychasthenia. A. Salazar.—p. 245.

62. **Ocular Tuberculosis.**—Basterra remarks that the tuberculous origin of ocular affections of the most varied kinds is recognized to be far more common than was formerly supposed possible. Experience has demonstrated further the comparative frequency of spontaneous cures of what seemed very grave lesions. Small tuberculous lesions of the conjunctiva seem most promising for excision or cauterization with heat or chemicals. He excised a lesion of this kind with the bistoury a year ago and applied the actual cautery to the site. The cure has been complete to date. In another case a woman of 72 had tuberculous lesions in the conjunctiva of both lower lids. They were treated with 50 per cent. lactic acid, and the patient has been cured for over a year. Surgical treatment is also the best for tuberculous lesions in the lacrimal sac and duct. Cases are known in which tuberculous lesions of the eyes absolutely rebellious to local treatment, subsided spontaneously during a course of sanatorium treatment or sojourn in the mountains.

The records of tuberculin in ocular tuberculosis are conflicting, but enough successful cases have been reported to justify its use in connection with general and local measures. The technic for giving tuberculin for diagnosis and treatment is explained in minute detail, as also the various local measures that have been recommended.

Prensa Medica Argentina, Buenos Aires

June 30, 1918, **5**, No. 3

69 *Joint Manifestations of Tardy Inherited Syphilis. M. R. Castex and R. Denis.—p. 25. Continuation.
70 Diagnosis of Tuberculosis in Children. G. A. Alfaro.—p. 31.
71 *Reconstruction of Lip after Removal of Cancer. A. A. Alsina.—p. 34.

69. **Joint Manifestations in Tardy Inherited Syphilis.**—Castex and Denis continue their article, calling attention in particular to the case they describe in which spondylitis with ankylosis, of the Bechterew type in its most pronounced form, is evidently a manifestation of tardy inherited syphilis. They have been unable to find a similar case on record in which syphilis was incriminated. The syphilitic origin in this case is evidenced by joint manifestations elsewhere which yielded to treatment for syphilis, and by syphilis in the parents. The spinal ankylosis had become too solidly established during the eight years since it first attracted attention for any benefit to be anticipated from antisyphilitic measures at this late date. The patient is a married man of 35, who at the age of 25 developed lumbar pains and supposed sciatica, rebellious to treatment as for rheumatism, and the ankylosing spondylitis soon followed. Under vigorous treatment for syphilis there has been no further progress of the spondylitis, and all the other disturbances have subsided. Another argument in favor of the inherited syphilis as the cause of this deforming spondylitis is the fact that the patient's brother recently developed an acute and extremely painful hydrarthrosis of the elbow, rebellious to the salicylates, which subsided promptly under potassium iodid. Both the men present unmistakable stigmata of inherited syphilis. In the majority of the cases illustrated, the lesions had been ascribed to tuberculosis, and futile treatment long applied on this basis and operations done. An increase in the pain at night is suspicious of a syphilitic origin. In case of doubt, they add, a well conducted intensive course of specific treatment never does harm.

71. **Reconstruction of Lower Lip After Removal of Cancer.**—Alsina reports excellent results from application of Doyen's three-triangle method, with illustrations of a case.

Revista Ibero-Americana, Madrid

April, 1918, **39**, No. 164

72 *Connection between Mikulicz', Hodgkin's, Banti's, Alibert's and Paget's Diseases. D. R. Lozano.—p. 241.
73 Physiotherapy of Gastric Ulcer. S. Carro.—p. 255.
74 *Epinephrin in Asthma. G. Triviño.—p. 271.
75 Treatment of Valvular Disease. A. Mut.—p. 277.
76 Blood Diseases. G. Pittaluga.—p. 287.
77 Transvesical Prostatectomy. C. Negrete.—p. 299. Conclusion.

72. **Connection Between Mikulicz', Hodgkin's, Banti's, Alibert's and Paget's Diseases.**—Lozano concludes from study of the literature and his own clinical experience that Mikulicz' and Hodgkin's diseases are very much alike, and transitional forms are comparatively common. The same is true, although to a lesser extent, of both Mikulicz' and Hodgkin's disease and Banti's disease. Sometimes a fungoid mycosis and Paget's disease present clinical lesions similar to those of these three diseases. If all these diseases are of microbian origin, the portal of entry may be supposed to be in the salivary glands for Mikulicz' disease; in the pancreas in Banti's; in the mamma in Paget's and in the sweat glands in Alibert's. Extreme caution in treatment is necessary as surgical intervention has proved useless or directly injurious,

and roentgen treatment has repeatedly produced disastrous consequences, precipitating cachexia.

74. **Epinephrin in Asthma.**—Triviño has used epinephrin in twenty-two cases of asthma and, with one exception, the results were highly encouraging. In this one exception, there may have been a complicating emphysema. In other cases the patients were always relieved within twenty minutes. He followed the technic advised by A. Hertz who has had considerable clinical experience besides his experience with asthma in his own person. He found that injection of 3 drops of the usual 1 per thousand solution of epinephrin gave prompt relief, but the by-effects were disagreeable. Reducing the dose to 2 drops or even 1 drop proved usually efficient without the by-effects. Triviño did not find the relief so immediate as others have reported, but it was always experienced within twenty minutes.

Revista del Instituto Bacteriologico, Buenos Aires

January, 1918, **1**, No. 2

78 *Normal Beef Serum in Human Anthrax. J. Penna.—p. 115.
79 Necessity for Standardization of Anti-Anthrax Vaccine. R. Kraus and P. Beltrami.—p. 133.
80 Spontaneous Sarcoma in Guinea-Pig. C. Miguez.—p. 147.
81 Transmission of Epithelioma of White Rat. A. H. Roffo.—p. 155.
82 *Toxicity of Emetin. J. Guglielmetti. B. A. Houssay and R. F. Vaccarezza.—p. 161.
83 Action of Snake Venoms on Carbohydrates, Fats and Milk. B. A. Houssay and J. Negrete.—p. 173.
84 *Production of Diphtheria Antitoxin. R. Kraus and A. Sordelli.—p. 195.
85 *Infectious Bulbar Paralysis. J. Negrete and Kantor.—p. 205.

78. **Normal Beef Serum in Treatment of Anthrax.**—Penna gives the bases and the history of this treatment and the favorable results, as already mentioned in these columns and editorially.

82. **Toxicity of Emetin.**—The experimental research related demonstrates that the promptly lethal dose for laboratory animals is from 0.0075 to 0.02 gm. per kg. The drug displays marked cumulative action; dogs succumb when given one tenth of the fatal dose on successive days. The lethal dose for man is not known, but severe toxic cumulative action is reported in three adults given emetin for amebiasis, one taking thus a total of 1.08 gm. of emetin hydrochlorid in the space of thirty-three days by intravenous injection. Another was given five daily subcutaneous injections of 0.10 gm. and the other patient, eight of 0.06 gm. each, then suspension for eight days and resumption of the series. It had to be arrested at the fourth injection of the second series on account of the severe toxic symptoms. They persisted for two weeks.

84. **Improved Technic for Production of Antitoxic Serums.**—THE JOURNAL has already mentioned the success of Kraus and Sordelli in obtaining antitoxic serums of greater potency and in a much shorter time than with other technics (twenty days). They found it best to use old horses, and injected the toxin, neutralized with antitoxin, repeating the injections twice a week in progressive doses.

85. **Infectious Bulbar Paralysis.**—Negrete and Kantor report experimental research on this disease of domestic animals. It is known as pseudo-rabies in Brazil, the only country in South America in which it has been reported, but it is entirely distinct from rabies. The mouth and nose seem to be the natural portals for infection, and the nasal secretions and the urine of the infected animals are infectious. They found it impossible to immunize against the infection.

Revista de Medicina y Cirugia, Havana

July 10, 1918, **23**, No. 13

86 *Idiosyncrasy for Dichloramine-T. E. F. Soto.—p. 351.
87 *Ocular Tuberculosis. F. M. Fernandez.—p. 353.

86. **Idiosyncrasy to Dichloramin-T.**—Soto relates that he applied dichloramin-T in a case of rebellious purulent ethmoiditis. He ordered the woman to use the dichloramin-T in a 0.5 per cent. dilution, in the form of a spray, morning and evening. The atomizer used was made entirely of glass, and she was instructed not to squeeze the bulb more than ten times at one application. By the fifth day of this treatment the nose, lip, and cheeks had become much swollen and blistered, as also the nasal mucosa. On suppression of the spray the whole subsided in a few days. Thinking that the preparation of the spray had been defective, he had a new supply prepared, but this caused the same disturbances as before, even more pronounced.

87. **Ocular Tuberculosis.**—Fernandez discusses ocular tuberculosis in its various localizations, the diagnosis, treatment and prognosis. As a rule, he remarks, ocular tuberculosis is secondary, but usually the primary focus is latent. Ocular lesions rarely accompany pulmonary tuberculosis. Any ocular mischief of a chronic character should be regarded with suspicion, and the diagnosis made by exclusion, the tuberculin test, and the family antecedents.

Revista Medica Cubana, Havana

May, 1918, **20**, No. 5

88 Science in General. J. Santos Fernandez.—p. 233.
89 *Helminthology of Cuban Children. E. Cuervo.—p. 242.
90 Tumors of Umbilical Cord. S. G. Marruz.—p. 247.
91 Recurring Torsion of Spermatic Cord. G. Pujadas.—p. 250.

89. **Helminths in Children in Cuba.**—Cuervo cites the works that have been published to date on intestinal parasites in Cuba, and reviews his own research.

Revista Medico-Cirurgica do Brazil, Rio de Janeiro

May, 1918, **26**, No. 5

92 Gorgas' Work in Panama. J. P. Fontenelle.—p. 193.
93 *Medicolegal Institutes. L. Ribeiro, Jr.—p. 196; E. N. Silva.—p. 204.
94 *Host of the Trypanosoma Cruzi. C. Chagas.—p. 220.

93. **Necessity for Founding Medicolegal Institutes.**—Ribeiro laments that the teaching of forensic medicine at the University of Rio de Janeiro has had to be exclusively theoretical except when the professors in charge have accomplished the impossible in procuring material. There is no regular provision for practical instruction and expert forensic medical testimony. Silva describes the morgue and medicolegal institutes in other cities. Even Bahia in northern Brazil has its new autonomous Instituto Medicolegal, and Prof. O. Freire, in charge, has organized in connection with it a medicolegal council.

94. **Permanent Host of Trypanosome of Chagas' Disease.**—Chagas found that fully 45 or 50 per cent. of the armadillos—mammals which abound in Brazil—caught in regions infested with Chagas' disease contained the special causal trypanosome. The animal does not seem to be affected at all by the presence of the trypanosome although the latter is extremely virulent for man. The intermediate host, the biting bug, *Lamus megistus*, may possibly be a parasite of the armadillo, as certain epidemiologic facts observed in Africa suggest that the trypanosome of African sleeping sickness can flourish under natural conditions in vertebrates other than man.

Revista de Medicina y Cirugia Practicas, Madrid

July 7, 1918, **120**, No. 1513

95 *Juvenile General Paralysis. R. del Valle.—p. 5.

July 14, 1918, **120**, No. 1514

96 *Diagnosis of Sciatica. J. Blanc y Fortacin.—p. 39.

95. **Juvenile General Paralysis.**—Del Valle cites the compilation in a recent Paris thesis of sixty-three cases of general paralysis in persons between 13 and 22 years old. The author was impressed with the frequent coexistence of infantilism of thyroid origin, and in one case he observed marked improvement under thyroid treatment.

96. **Diagnosis of Sciatica.**—Blanc warns to be wary of diagnosing sciatica in the young. In a case described a youth of 16 on getting up after resting for a few minutes after an athletic game, experienced intense pain in the sciatic region with contracture of the psoas. The pain continued intense for two weeks with no relief from measures applied for the assumed sciatica. The neck of the femur was found to be fractured, with sequesters and signs of an old fungous process. Resection of the joint was imperative and the postoperative course has been excellent. Roentgenoscopy in this case had failed to give instructive findings.

Revista Medica del Uruguay, Montevideo

May, 1918, **21**, No. 5

97 *Annular Dystocia. J. C. Carlevaro.—p. 199.
98 *Placenta Praevia. C. P. Colistro.—p. 204.
99 *Familial Periodic Paralysis. P. E. Nuñez.—p. 208.
100 *Hernia of Pouch of Douglas. C. Stajano.—p. 229.

97. **Annular Dystocia.**—The special feature of the case reported was the successful application of the forceps according to Loriente's single hand method.

98. **Twin Birth with Placenta Praevia.**—The placenta praevia was of the marginal type. Treatment of the hemorrhage was exclusively obstetrical as in all cases of low placenta praevia at the Montevideo maternity. The mortality of the thirty mothers was 3.33 per cent., and of the children, 23.24 per cent.

99. **Familial Periodic Paralysis.**—Nuñez remarks that only about seventy cases of this disease are on record, and he adds another family to the list. The grandfather died at 58 after having had attacks of paralysis recur every two or three months after the age of 16. The attacks always came on during sleep, and they never lasted for more than two days. Of his eight children, three presented similar attacks, beginning at 13, 16 and 19, but the intervals were longer, sometimes over a year. One is a bachelor, the others are women with seven and two children. Of the two children, one boy is epileptic, the other boy healthy, but neither is over 9. The three boys in the other woman's family of seven children all present the disease.

Of the total seven cases, two terminated fatally during an attack. In none of the cases are there prodromal symptoms. One of the grandchildren—a painter of 23—had forty-six attacks in the hospital during the year of his stay. The electric reactions are remarkable in that the muscles and nerves seem well nourished and active and respond normally to electric tests during the intervals, but during the attack they respond no more than if they were in a cadaver. As soon as the attack is over, however, they regain at once their full sensibility.

100. **Hernia of Pouch of Douglas.**—The woman of 66 had borne eight children. She applied for relief from a large tumor which appeared in the vulva at the least effort, and had been growing larger during the last six years.

Revista Sud-Americana de Endocrinologia, etc., Montevideo

July, 1918, **1**, No. 7

101 Bacilli Resembling Anthrax Bacilli. C. Spada, Jr.—p. 167.

Semana Medica, Buenos Aires

May 23, 1918, **25**, No. 21

102 Campaign against Tuberculosis. L. Agote.—p. 579; E. R. Coni. —p. 592.
103 Radiologic Ambulance: Heuser Model. C. Heuser.—p. 583.
104 The Vegetable Pear as Useful Fruit. A. D'Alessandro.—p. 586.
105 *Simulation of Sex. M. G. Vasquez.—p. 588.
106 Visual Acuity in the Schools. P. B. Ferro.—p. 589.

105. **Simulation of Sex.**—Vasquez was called to make out the death certificate for a man of 90 who had been born and died on a small farm near Buenos Aires. He had buried his wife many years before and had always been a respected citizen. The body proved to be that of a normally formed woman, with hymen intact.

Siglo Medico, Madrid

July 6, 1918, **65**, No. 3369

107 Facial Paralysis in a Syphilitic. E. F. Sanz.—p. 522.

July 13, 1918, **65**, No. 3370

108 *Diathermy in Gonorrhea. B. N. Canovas.—p. 545. Conclusion.
109 Photographic Register of the Pulse. M. Gil-Casares.—p. 554. Conclusion.

108. **Diathermy in Gonorrhea in the Male.**—Canovas reviews his favorable experience with gonorrhea given from five to thirty applications of diathermy. Seven of the men were cured, their gonorrhea dating from one to fourteen weeks, and three years. In eight other cases there was a clinical cure but the bacteriologic cure was not verified. Five others were much improved but a complete cure was not established although thirty-five applications were made in one case, dating from thirteen months, and eighty-four applications in a case of only two weeks' standing. Only one patient showed no benefit from the diathermy; his gonorrhea was of seven years' standing and forty-one applications were made. One of the men who had gonococcus prostatitis had suffered for two years from pain in the anal and perineal region with recurring gonorrheal discharge. By the third application of the diathermy, the pains and the discharge disappeared and did not return even after drinking copiously of beer. Five more applications were made to confirm the cure. There was gonococcus prostatitis in a number of the cured cases.

Mededeelingen van de Burg. Geneesk. Dienst, Batavia

1918, No. 2

110 Systematic Study of Health Conditions among the Workers in Lampong District, Java. H. N. van der Heyden and others.—p. 1. Dutch and German edition.

Hygiea, Stockholm

April 30, 1918, **80**, No 8

111 *Hemolytic Jaundice. V. Edman.—p. 433.
112 Pathologic Changes Found in Spleen in Two Cases of Congenital Hemolytic Jaundice. N. Wessen.—p. 453.

111. **Splenectomy for Hemolytic Jaundice.**—Edman reports two cases of congenital hemolytic jaundice treated by splenectomy, and several other cases happen to be mentioned in the different society proceedings in this issue, with discussions and review of the literature. Edman's two cases were the first published cases in Sweden in which the operation was done on a correct diagnosis. His patients were a middle-aged woman and her son of 18. Both mother and son had presented jaundice since early childhood, and the spleen had gradually become much enlarged. Both had been submitted to vigorous roentgen treatment without benefit, except slight subsidence of the spleen. The other symptoms had become aggravated. The mother had hemoglobin of 45 per cent., reds 2,940,000 and blood index of 0.76, and with the resistance test the findings were 0.46 to 0.50 per cent. Six weeks after the splenectomy the figures were: hemoglobin 58; reds 4,610,000; blood index 0.84, and the resistance findings normal. The jaundice bleached out by the third day and there was not a trace left in two weeks, and tests for urobilin and urobilinogen have been constantly negative since in both mother and son. In two cases of hemolytic jaundice Troell instead of removing the spleen, ligated part of the hilus, seeking thus to shut it off almostly completely from the circulation, as a milder equivalent for splenectomy in a girl of 16 with Banti's disease, and in a woman of 65, with pernicious anemia. The effect on the blood disease seemed to be excellent, but the spleen was too pathologic to stand it, and sloughing and a fistula required operative measures later. The findings with ligation of a normal spleen in a healthy laboratory animal cannot be compared with those in the pathologic spleen of Banti's disease or hemolytic jaundice. Neither the ligation nor splenectomy arrested the fatal termination in the two pernicious anemia cases. Progressive improvement was pronounced in his hemolytic jaundice case after splenectomy.

Ugeskrift for Læger, Copenhagen

July 11, 1918, **80**, No. 28

113 *The Coarse Bread Question. E. C. van Leersum.—p. 1081.
114 Quackery in Denmark. G. Jepsen.—p. 1094.

113. **Absorption of Nitrogen from Coarse Bread.**—Van Leersum presents evidence to show that the degree of the utilization of the nourishment in coarse bread depends on the length of the sojourn of the food in the alimentary canal. When it is passed along rapidly, with vigorous peristalsis, it does not afford the nourishment that it does when the bowel movements are sluggish and time is given for greater absorption. This explains the differences between the results reported by different writers on this subject of coarse bread. For the constipated, the presence of the bran ensures better utilization of the nutrient elements in the bread. For persons with normal peristalsis, the admixture of bran stimulates the peristalsis, and thus hastens the passage of the food, with the consequence that the use of coarse bread signifies a loss in the amount of nitrogen absorbed.